

IN THE  
**United States Court of Appeals**  
FOR THE FEDERAL CIRCUIT

BROADBAND iTV, INC.,

*Plaintiff-Appellant,*

v.

AMAZON.COM, INC., AMAZON.COM SERVICES LLC,  
AMAZON WEB SERVICES, INC.,

*Defendants-Appellees.*

On Appeal from the United States District Court  
for the Western District of Texas  
No. 6:20-cv-00921, Hon. Alan D. Albright

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**NONCONFIDENTIAL JOINT APPENDIX**

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J. David Hadden

*Counsel of Record*

Saina S. Shamilov

Ravi R. Ranganath

FENWICK & WEST LLP

801 California Street

Mountain View, CA 94041

(650) 988-8500 (telephone)

dhadden@fenwick.com

*Counsel for Appellees*

*Amazon.com, Inc., Amazon.com  
Services LLC, and Amazon Web  
Services, Inc.*

Jeffrey A. Lamken

*Counsel of Record*

Rayiner Hashem

MOLOLAMKEN LLP

The Watergate, Suite 500

600 New Hampshire Avenue, N.W.

Washington, D.C. 20037

(202) 556-2000 (telephone)

(202) 556-2001 (fax)

jlamken@mololamken.com

*Counsel for Appellant Broadband  
iTV, Inc.*

*(Additional Counsel Listed on Inside Cover)*

---

Todd R. Gregorian  
FENWICK & WEST LLP  
555 California Street, 12th Floor  
San Francisco, CA 94104  
(415) 875-2300 (telephone)

Jonathan G. Tamimi  
FENWICK & WEST LLP  
401 Union Street, 5th Floor  
Seattle, WA 98101  
(206) 389-4510 (telephone)

*Counsel for Appellees  
Amazon.com, Inc., Amazon.com  
Services LLC, and Amazon Web  
Services, Inc.*

Robert Kramer  
David Alberti  
Hong Lin  
KRAMER ALBERTI LIM &  
TONKOVICH LLP  
577 Airport Boulevard, Suite 250  
Burlingame, CA 94010  
(650) 825-4300 (telephone)

Benoit Quarmby  
Jonathan E. Barbee  
MOLOLAMKEN LLP  
430 Park Avenue  
New York, NY 10022  
(212) 607-8160 (telephone)

*Counsel for Appellant Broadband  
iTV, Inc.*

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The material omitted at Appx3579-3580 contains deposition testimony regarding BBiTV's use of Navic software. The material omitted at Appx3587, Appx3589, Appx3591-3596, and Appx3617-3627 relates to technical specifications and services provided by Navic to BBiTV and expert reports and testimony discussing that material. The material omitted at Appx3601-3603 is a portion of an expert report discussing Amazon's claim that BBiTV derived the inventions at issue from Navic. The material omitted at Appx3615-3616 contains descriptions of confidential discovery material. The material omitted at Appx3632-3653 contains confidential discovery material relating to BBiTV's relationship with Navic and use of Navic technology. The material omitted at Appx3655-3671, Appx3673-3822, and Appx3824-3847 comprises confidential Navic technical documents. The material omitted at Appx3849 and Appx3860-3861 is a declaration including discussion of BBiTV's meeting with Navic and discussion of Navic's products. The material omitted at Appx3933-3949 comprises deposition testimony discussing Navic documents. The material omitted at Appx3957-3959 and Appx3979-3981 contains inventor testimony. The material omitted at Appx3963-3976 contains expert deposition testimony. The material omitted at Appx3985-Appx4128 contains excerpts of an expert report discussing the function of accused Amazon systems and confidential Amazon discovery material. The material omitted at Appx4202-4214 contains excerpts of a confidential BBiTV technical guide. The material omitted at Appx4216-4220 contains deposition testimony marked confidential during discovery. The material omitted at Appx4224-4234 contains excerpts of an expert report discussing confidential Navic technical materials.

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

**BROADBAND iTV, INC.**

*Plaintiff,*

**v.**

**AMAZON.COM, INC.,  
AMAZON.COM SERVICES LLC  
and AMAZON WEB SERVICES,  
INC.,**

*Defendants.*

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**Civil No. 6:20-cv-00921-ADA**

**MEMORANDUM OPINION AND ORDER**

Before the Court is the Motion for Summary Judgement of Invalidity under 35 U.S.C. § 101 (the “Motion”) filed by Amzon.com, Inc.; Amazon.com Services LLC; and Amazon Web Services, Inc. (collectively, “Defendants”). ECF No. 111. The Court heard the parties’ arguments during the final pretrial conference held on August 30, 2022, took the motion under advisement, and canceled the jury trial. ECF Nos. 196, 197, 200. After considering supplemental briefing (ECF Nos. 202, 203), Court **GRANTS** Defendants’ Motion for the reasons set forth below.

**I. LEGAL STANDARD**

**A. Motion for Summary Judgment**

“Summary judgment must be granted when, drawing all reasonable inferences in favor of the non-movant, there is no genuine issue as to any material fact.” *Billups-Rothenberg, Inc. v. Associated Reg'l & Univ. Pathologists, Inc.*, 642 F.3d 1031, 1036 (Fed. Cir. 2011); Fed. R. Civ. P. 56(a). “Under 35 U.S.C. § 282, a patent is presumed valid and one challenging its validity bears the burden of proving invalidity by clear and convincing evidence.” *Innovative Scuba Concepts, Inc. v. Feder Indus., Inc.*, 26 F.3d 1112, 1115 (Fed. Cir. 1994). When “clear and convincing” evidence requirement applies, the trial judge’s summary judgment inquiry as to whether a genuine

issue exists will be whether the evidence presented is such that a jury applying that evidentiary standard could reasonably find for either the plaintiff or the defendant.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255, 106 S. Ct. 2505, 2514, 91 L. Ed. 2d 202 (1986); *see also Eli Lilly & Co. v. Barr Lab’ys, Inc.*, 251 F.3d 955, 962 (Fed. Cir. 2001) (“[A] moving party seeking to invalidate a patent at summary judgment must submit such clear and convincing evidence of invalidity so that no reasonable jury could find otherwise.”). In determining whether a genuine issue of material fact exists, the court views the evidence in the light most favorable to the nonmoving party and resolves all doubts in its favor. *Eli Lilly & Co.*, 251 F.3d at 962.

### **B. Patent Eligibility Under 35 U.S.C. § 101**

Section 101 of the Patent Act defines the subject matter eligible for patent protection: “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101. However, courts have long recognized that laws of nature, natural phenomena, and abstract ideas are not patentable under § 101 because they are “the basic tools of scientific and technological work.” *Alice Corp. Pty. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (citations omitted).

In *Alice*, the Supreme Court articulated a two-step framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. *Id.* at 217. In *Alice* step one, the court must “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* In doing so, the court must be careful not to over generalize the invention because “all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Lab’ys, Inc.*, 566 U.S. 66, 71 (2012)). Instead, “the claims are considered in their entirety to ascertain whether their character as a whole is

directed to excluded subject matter.” *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1312 (Fed. Cir. 2016) (citation omitted). If the claims are not directed to one of those patent-ineligible concepts, the inquiry ends. If the claims are directed to one of those patent-ineligible concepts, then the inquiry proceeds to step two of the *Alice* framework.

In *Alice* step two, the court considers whether the claims contain an “inventive concept” sufficient to “transform the nature of the claim into a patent-eligible application.” *Alice*, 573 U.S. at 217–18 (quotation omitted). In doing so, the court considers “the elements of each claim both individually and ‘as an ordered combination’” to determine whether they are “‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* (quoting *Mayo*, 566 U.S. at 72–73). *Alice* step two is satisfied when the claim limitations “involve more than performance of ‘well-understood, routine, [and] conventional activities previously known to the industry.’” *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018) (quoting *Alice*, 573 U.S. at 225 and *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1347–48 (Fed. Cir. 2014)). However, to recite an inventive concept, a patent must do more than recite an abstract idea “while adding the words ‘apply it.’” *Alice*, 573 U.S. at 221 (quoting *Mayo*, 566 U.S. at 72). “[S]imply appending conventional steps, specified at a high level of generality, to laws of nature, natural phenomena, and abstract ideas cannot make those laws, phenomena, and ideas patentable.” *Mayo*, 566 U.S. at 82. Likewise, “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Alice*, 573 U.S. at 223.

“While the ultimate determination of eligibility under § 101 is a question of law, like many legal questions, there can be subsidiary fact questions which must be resolved en route to the ultimate legal determination.” *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121,

1128 (Fed. Cir. 2018). As such, “[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact” that must be “proven by clear and convincing evidence.” *Berkheimer*, 881 F.3d at 1368. Additionally, specific improvements described in a patent specification, “to the extent they are captured in the claims, [may] create a factual dispute regarding whether the invention describes well-understood, routine, and conventional activities.” *Id.* at 1369. However, “[w]hen there is no genuine issue of material fact regarding whether the claim element or claimed combination is well-understood, routine, conventional to a skilled artisan in the relevant field, [patent eligibility] can be decided on summary judgment as a matter of law.” *Id.* at 1368.

### C. Collateral Estoppel

The doctrine of collateral estoppel precludes relitigation of an issue if “(1) the identical issue was previously adjudicated; (2) the issue was actually litigated; and (3) the previous determination was necessary to the decision.” *Bradberry v. Jefferson Cnty., Tex.*, 732 F.3d 540, 548 (5th Cir. 2013) (citation omitted). “[T]he issue of whether to apply collateral estoppel is a question of law . . . .” *Soverain Software*, 778 F.3d at 1314 (quoting *Bradberry*, 732 F.3d at 549).

In the patent context, “where a patent has been declared invalid in a proceeding in which the ‘patentee has had a full and fair chance to litigate the validity of his patent’, the patentee is collaterally estopped from relitigating the validity of the patent.” *Miss. Chem. Corp. v. Swift Agric. Chems. Corp.*, 717 F.2d 1374, 1376 (Fed. Cir. 1983) (internal citation omitted).

Collateral estoppel applies to the issue of patent eligibility. *See, e.g., NetSoc, LLC v. Oath Inc.*, No. 18-CV-12267 (RA), 2020 WL 419469, at \*5-9 (S.D.N.Y. Jan. 24, 2020). “[W]here different patents are asserted in a first and second suit, a judgment in the first suit will trigger claim preclusion only if the scope of the asserted patent claims in the two suits is essentially the same.”

*VideoShare, LLC v. Google LLC*, No. 6:19-cv-663-ADA, 2020 WL 6365543, at \*4 (W.D. Tex. May 4, 2020) (quoting *SimpleAir, Inc. v. Google LLC*, 884 F.3d 1160, 1167 (Fed. Cir. 2018)).

“Complete identity of claims is not required to satisfy the identity-of-issues requirement [of collateral estoppel].” *Soverain Software LLC v. Victoria’s Secret Direct Brand Mgmt., LLC*, 778 F.3d 1311, 1319 (Fed. Cir. 2015). Instead, “[i]f the differences between the unadjudicated patent claims and adjudicated patent claims do not materially alter the question of invalidity, collateral estoppel applies.” *Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1342 (Fed. Cir. 2013).

## **II. UNDISPUTED FACTS**

The Court finds that there is no genuine dispute as to the following material facts. These facts come from either the undisputed record or from the nonmovant’s own witnesses and arguments.

### **A. Background Facts**

Plaintiff Broadband iTV, Inc. (“BBiTV”) alleges infringement of U.S. Patent Nos. 9,973,825 (the “’825 patent”), 9,648,388 (the “’388 patent”), 10,536,750 (the “’750 patent”), 10,536,751 (the “’751 patent”), 10,028,026 (the “’026 patent”). Specifically, BBiTV alleges that Amazon infringes claims 1, 10, 15 and 17 of the ’825 patent, claims 1, 13 and 17 of the ’388 patent, claims 1, 7 and 8 of the ’750 patent, claims 1, 3 and 8 of the ’751 patent, and claims 1, 6 and 7 of the ’026 patent. ECF No. 175 at 6-7.

### **B. The ’825 Patent**

The ’825 patent is titled “Dynamic Adjustment of Electronic Program Guide Displays Based on Viewer Preferences for Minimizing Navigation in VOD Program Selection,” and lists Milton Diaz Perez as the sole inventor. ECF No. 113-1 (’825 patent) at Cover. The ’825 patent

concerns adjusting the order of categories in a list of video-on-demand (“VOD”) programs based on what a user has watched previously. *Id.*, Abstract, cl. 1. The ’825 patent discloses a “MyEPG” menu that, upon user login, shows an individualized list of VOD categories. *Id.* at 19:41-20:8. This category list may be ordered based on individual users’ “actual viewing habits,” *i.e.*, a log of “the viewer’s consumption of programming content.” *Id.* at 20:58-67.

The inventor Mr. Diaz testified that he did not invent “hierarchical categories and subcategories.” ECF No. 152-2 (Diaz July 30, 2015 Tr.) at 774:15-18. For collecting the users’ viewing data, the ’825 patent discloses “a Tracking System 15 of conventional type” that could collect “viewer navigation data.” ’825 patent at 7:28-38. Such viewing data are exported to a third party “non-biased or unrelated firm” to create user profiles using “profile analysis methods” that the specification does not describe in any detail or specify in any other way. *Id.* at 7:38-41.

According to the ’825 patent, the user’s viewing data is stored in a “Usage History database 703.” *Id.* at 20:58-67. The specification does not disclose any particular structure for the database or otherwise provide any details about it. *See id.*

In the ’825 patent, a “MyEPG Server 702” determines the order of the categories based on the stored viewing data. *Id.* The specification does not disclose any particular structure for the MyEPG server. *See id.*

The ’825 patent states that ordering the categories is based on “relevance schema” or “viewer preference algorithms,” but the specification does not describe any particular “schema” or “algorithm” or provide any details about them. *Id.* at 20:65, 22:28.

Claim 1 of the ’825 patent is reproduced below:

1. A method for dynamic adjustment of an individualized electronic program guide where the adjustment is based at least in part on individual viewer consumption of video-on-demand programs on a subscriber TV system to enable navigating by an individual viewer in a TV subscriber household that may have a plurality of viewers



to video-on-demand programs offered on a video-on-demand platform of a digital TV services provider which is at least part of a digital TV services provider system, the method comprising:

(a) maintaining, at the digital TV services provider system, an electronic program guide database comprising electronic program guide data, and a usage history database comprising a log of selection data corresponding to the viewer's consumption of the video-on-demand programs using the video-on-demand platform;

(b) establishing, at the digital TV services provider system, viewer-individualized electronic program guide data for each of a plurality of individual viewers to enable the generation of viewer-individualized electronic program guides for each of said plurality of individual viewers at the subscriber TV system for use in accessing the video-on-demand programs, and allowing each respective individual viewer to access a display of their respective viewer-individualized electronic program guide through a Log-In step by which the respective individual viewer operating the subscriber TV system can be associated with their respective viewer-individualized electronic program guide;

(c) in one or more previous sessions while said respective individual viewer is logged onto their respective viewer-individualized electronic program guide in order to access the video-on-demand programs on the subscriber TV system, tracking, at the digital TV services provider system, said respective individual viewer's consumption of the video-on-demand programs listed in their respective viewer-individualized electronic program guide and saving the selection data in the usage history database;

(d) determining, at the digital TV services provider system, an order of relevance of a plurality of category names for said respective individual viewer selection of video-on-demand programs from their respective viewer-individualized electronic program guide based at least in part on said respective individual viewer's selection data from said one or more previous sessions as stored in the usage history database and reflecting said respective individual viewer's preferences for selection of video-on-demand programs from their respective viewer-individualized electronic program guide, and based at least in part on the electronic program guide data in the electronic program guide database; and

(e) at the start of each new session when said respective individual viewer logs onto their respective viewer-individualized electronic program guide in order to access video-on-demand programs on the subscriber TV system, reordering a current display listing of the category names for categories of video-on-demand programs on said respective individual viewer's viewer-individualized electronic program guide based at least in part on said determined order of relevance.

*Id.*, cl. 1.

said respective individual viewer's viewer-individualized electronic program guide based at least in part on said determined order of relevance.

**C. A Court Previously Invalidated Related U.S. Patent No. 7,631,336 (the “’336 Patent”)**

**Under § 101**

U.S. Patent No. 7,631,336 (the “’336 patent”) is titled “Method for Converting, Navigating, and Displaying Video Content Uploaded from the Internet to a Digital TV Video-on-Demand Platform.” ECF No. 113-7 (’336 patent) at Cover. The ’336 patent claims priority to U.S. Appl. No. 10/909,192 filed on July 30, 2004 (’192 application). *Id.*

On April 9, 2014, BBiTV filed suit against Oceanic Time Warner Cable, LLC, among others, in the District of Hawaii, alleging infringement of the ’336 patent. *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC*, 135 F. Supp. 3d 1175, 1178 (D. Haw. 2015) (ECF No. 113-6).

The Hawaii court held the claims of the ’336 patent ineligible under 35 U.S.C. § 101, concluding that the claims were directed to the abstract idea of “using the same hierarchical ordering based on metadata to facilitate the display and locating of video content” and recited only generic components to implement that idea. *Id.* at 1183, 1186, 1195.

With respect to the claim limitation of “Web-based content management system” in the ’336 patent, the Hawaii court stated: “‘data collection, recognition, and storage’ are ‘undisputedly well-known’ functions for servers. They do not impart any inventive concept.” *Id.* at 1193 (quoting *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014)). The Federal Circuit affirmed the decision of the Hawaii court under Rule 36 without an opinion. *Broadband iTV, Inc. v. Hawaiian Telecom Inc.*, 669 F. App’x. 555 (Fed. Cir. 2016).

Claim 1 of the ’336 patent is reproduced below:

1. A method for automatically enabling the converting, navigating and displaying of video content from a video content provider on an open online network to a discrete digital TV service provider network which is of the type employing a closed system of pre-screened and pre-programmed video content selectable for viewing by TV service subscribers inputting keypresses on their TV remote control units to set-top boxes connected to their TV equipment, which predetermined video content is listed by title for selection from an electronic program guide for a video-on-demand (VOD) platform of a the discrete digital TV service provider comprising:

(a) enabling the uploading of video content in a digital video format via an online network to a Web-based content management server that is connected to the VOD platform of the discrete digital TV service provider network, along with a title and a hierarchical address of hierarchically-arranged categories and subcategories as metadata for categorizing a hierarchical ordering for the title for the video content;

(b) converting the content uploaded to the Web-based content management server into a standard TV digital format used by the discrete digital TV service provider network and storing a “local instance” thereof at a video ID (VID) address in a video content database of the VOD platform, wherein the VID address is linked to the title for the video content;

(c) listing the title of the video content in an electronic program guide for the VOD platform of the discrete digital TV service provider using the same hierarchically-arranged categories and subcategories as used in the uploaded metadata for the hierarchical address for the video content in the electronic program guide of the VOD platform;

(d) providing a TV service subscriber, having a TV-equipment-connected set-top box connected to the VOD platform of the discrete digital TV service provider network, with access to the electronic program guide for the VOD platform for navigating through the hierarchically-arranged titles of video content by categories and subcategories therein in order to find the title of the video content desired for viewing on their TV equipment; and

(e) upon the TV service subscriber selecting, via their TV remote control unit in communication with the set-top box, the title for the video content from the hierarchically-arranged categories and subcategories of the electronic program guide, and the set-top box transmitting a request for the selected title to the VOD platform, then enabling retrieval of the selected video content stored at the VID address in the video content database of the VOD platform linked thereto, and transmission of the selected video content to the TV service subscriber's set-top box for display on the TV service subscriber's TV equipment.

'336 patent, cl. 1.

#### **D. The '388, '750, '751, and '026 Patents.**

After the Hawaii court invalidated the '336 patent, BBiTV filed the applications for the '388, '750, '751, and '026 patents, each claiming priority to the '192 application and listing Milton Diaz Perez as the sole inventor. ECF Nos. 113-1 through 113-5 at Covers.

The '026 patent shares a common specification with the '336 patent. The '388, '750 and '751 patents share a common specification, which is the same as the '026 patent specification, except it omits two embodiments: an Internet protocol television ("IPTV") embodiment and a multiple content sources embodiment. ECF No. 113-5 ('026 patent) at 13:65-22:4.

Each specification describes that TV viewers can access video on-demand ("VOD") content using a TV set-top box. ECF No. 113-2 ('388 patent) at 6:12-26. According to the specification, viewers can use a set-top box to access a hierarchical menu of categories and subcategories to navigate to a desired video. *Id.* at 6:38-55. The menu may be generated using "templates." *Id.* at 3:13-50.

To prepare the collection of VOD titles made available to the viewers, the VOD service provider uses a server called "Content Management System" to receive video content from content providers. *Id.* at 9:44-51. The content provider can also supply "metadata," information for classifying the content by title and topic. *Id.* This information ultimately determines the hierarchical structure of the menu shown on the viewers' TV screens. *Id.* at 10:52-56.

Claim 1 of the '388 patent is reproduced below:

1. A set-top box, providing video-on-demand services and operatively connected to TV equipment of a TV service subscriber, programmed to perform the steps of:

(a) receiving, at the set-top box, via a closed system from a video-on-demand content delivery system comprising one or more computers and computer-readable memory operatively connected to the one or more computers, respective video-on-demand application-readable metadata that is associated with respective video content and is usable to generate a video-on-demand content menu;

wherein the respective video content was uploaded to a Web-based content management system by a respective content provider device associated with a respective video content provider via the Internet in a digital video format along with respective specified metadata including respective title information, category information, and subcategory information designated by the respective video content provider to specify a respective hierarchical location of a respective title of the respective video content within the video-on-demand content menu displayed on the TV equipment, wherein the respective video-on-demand application-readable metadata is generated according to the respective specified metadata;

(b) providing, to the TV subscriber at the set-top box, the video-on-demand content menu for navigating through titles, including the respective titles of the respective video content, in a drill-down manner by category information and subcategory information in order to locate a particular one of the titles whose associated video content is desired for viewing on the TV equipment, wherein the video-on-demand content menu lists the titles using the same hierarchical structure of respective category information and subcategory information as was designated by the respective video content provider in the respective specified metadata for the respective video content, wherein a plurality of different video display templates are accessible to the set-top box, and wherein the video-on-demand content menu is generated using at least one of the plurality of different video display templates and based at least upon the respective specified metadata; and

(c) in response to the TV service subscriber selecting, via a control unit in communication with the set-top box, a first respective title associated with a first video content from the hierarchical structure of respective category information and subcategory information of the video-on-demand content menu using drill-down navigation, transmitting the selection to the set-top box for display on the TV equipment; and

(d) receiving, at the set-top box, the first video content for display on the TV equipment of the TV service subscriber, wherein in response to the selection the first video content was retrieved from a video server associated with the video-on-demand content delivery system.

*Id.*, cl. 1.

Claim 1 of the '026 patent also claims a technique of “Drill Down Navigation” of an EPG

(identified through underlining below):

enable[s] a subscriber using the Internet-connected digital device to navigate in a drill-down manner through titles by category information in order to locate a particular one of the titles whose associated video content is desired for viewing on the Internet-connected digital device using the same category information as was designated by a video content provider in metadata associated with the video content . . .

wherein the navigating through titles in a drill-down manner comprises navigating from a first level of the hierarchical structure of the video-on-demand content menu to a second level of the hierarchical structure to locate the particular one of the titles

...

ECF No. 113-5 at 22:20–27, 45–49. Claim 1 of the '026 patent also covers the feature of “Templatized EPG Display” (identified through underlining below) that is used in connection with the “Drill Down Navigation” feature

the Internet-connected digital device being configured to obtain and present to the subscriber an electronic program guide as a templatized video-on-demand display, which uses at least one of a plurality of different display templates to which the Internet-connected digital device has access . . .

wherein the templatized video-on-demand display has been generated in a plurality of layers, comprising:

(a) a first layer comprising a background screen to provide at least one of a basic color, logo, or graphical theme to display;

(b) a second layer comprising a particular display template from the plurality of different display templates layered on the background screen, wherein the particular display template comprises one or more reserved areas that are reserved for displaying content provided by a different layer of the plurality of layers; and

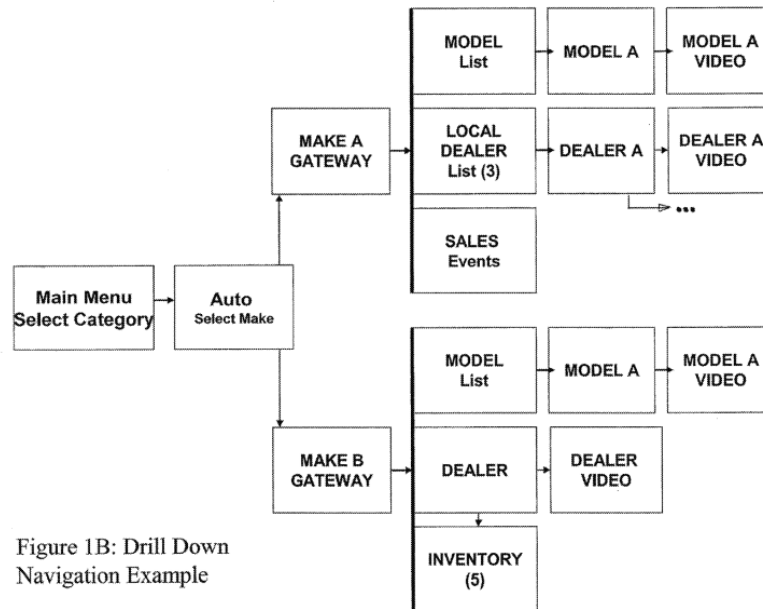
(c) a third layer comprising reserved area content generated using the received video content, the associated metadata, and the associated plurality of images to be displayed in the one or more reserved areas in the particular display template as at least one of text, an image, a navigation link, and a button, . . .

wherein a first template of the plurality of different display templates is used as the particular display template for the templatized display for displaying the first level of the hierarchical structure and wherein a second template of the plurality of different display templates is used as the particular display template for the templatized display for displaying the second level of the hierarchical structure . . .

*Id.* at 22:15–20, 22:15-44, 22:50–57.

The '026 patent discloses a web-based content management system (“WBCMS”) where providers could “greatly expand the content viewable on the VOD platform from studio-generated programs ... to an infinite universe of authors and publishers connected to upload viewable content ... via the Internet.” *Id.* at 18:27–31.

An example of Drill Down Navigation is discussed and explained in the specification of the '026 patent: "Through the Gateway, the VOD Application leaves the Menu mode and enters the Drill Down Navigation mode for successively displays of hierarchically-ordered video content which allow the viewer to navigate to progressively more focused content." *Id.* at 6:34–38. FIG. 1B of the '026 patent illustrates an example of Drill Down Navigation in the context of advertisements for cars, and col. 3:58-61 describes how the hierarchical levels of the Drill Down Navigation paths (e.g., Make, Model, Dealer, etc.) correspond to categories provided by content producers in metadata. *Id.* at Fig. 1B, 3:58–61.



The '026 patent at col. 7:18-30 describes an embodiment using the Templatized EPG Display having distinct layers, which is also shown in FIG. 1C:

In FIG. 1C, an example illustrates how a templatized VOD display is generated in layers. A Background screen provides a basic color, logo, or graphical theme to the display. A selected Template (display frame) appropriate to the navigation level the intended display resides on is layered on the Background. The Template typically has a frame in which defined areas are reserved for text, display image(s), and navigation links (buttons). Finally, the desired content constituted by associated Text, Image & Buttons is retrieved from the database and layered on the Template. The resulting screen display shows the combined background logo or theme, navigation frame, and text, video images, and buttons.



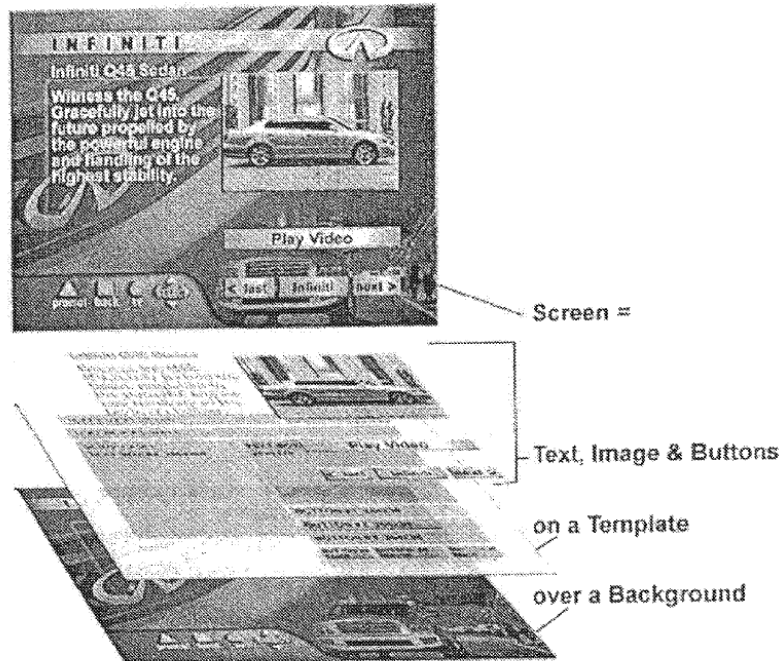


Figure 1C: Template Layer Model

*Id.* at 7:18–30, FIG. 1C. The '026 patent at col. 6:9-20 describes how the Templated EPG Display may be used at one or more levels of the Drill Down hierarchy of the EPG:

In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server 10 retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a “drill down navigation” method to find specific end content of interest.

*Id.* at 6:9–20.

The '750 and '751 patents claims are directed towards a video-on-demand application server system that works in tandem with the WBCMS in which content providers can designate titles, category, and subcategory information to influence how content is presented in an EPG. Claim 1 of both the '750 and '751 patents recite the Templated EPG Display feature in addition



to the WBCMS. Claim 1 of the '751 patent further requires the "Time Availability Metadata" to be provided to the WBCMS to allow the content providers to exert additional control over when their VOD content is to be made available. ECF No. 202 at 12.

Claim 1 of the '388 patent concerns a set-top box operating downstream from a WBCMS, and like the '026, '750, and '751 claims, allows content providers to designate titles, category, and subcategory information to influence how content is presented in an EPG. Claim 1 of the '388 patent recites the Drill Down Navigation and Templatized EPG Displays features and the WBCMS. ECF No. 202 at 13.

#### **E. Admissions**

Video-on-demand ("VOD") is an area of technology that allows a user or subscriber to access TV programming at any time, instead of on a schedule like traditional linear, broadcast TV programs.

The "Background" section in the patents describes the state of technology as of the July 2004 and June 2007—the priority dates for the Asserted Patents. VOD was a "recent type of interactive television service offered on digital TV systems . . . wherein a viewer can navigate through a program guide via the remote control unit and send a request via the set-top box for a desired video program to be addressed from the head-end to the subscriber's set-top box for display on the TV." ECF No. 113-2 at 1:58-64.

Although "recent," the Background explains that "Cable television (CATV) systems" were already used for "a vast majority of TV-viewing homes in the U.S," and "'video-on-demand' (VOD) system" was already a "primary type of interactive television system." '388 patent at 1:57-2:15. At that time, "[c]urrent VOD ads and program offerings are generally produced for mass audiences. It would be particularly desirable to adapt a VOD delivery platform to deliver ads,

promotions, programs, and informational content.” *Id.* at 2:61-63. The background further explains:

A primary type of interactive television system is referred to generally as a “video-on-demand” (VOD) system, wherein a viewer can enter a selection choice for a video program via the remote control unit to the set-top box and have the desired video program delivered instantaneously for display on the TV. Such VOD applications can include on-demand movies, documentaries, historic sports events, TV programs, infomercials, advertisements, music videos, short-subjects, and even individual screen displays of information. VOD-based interactive television services generally allow a viewer to use the remote control to cursor through an on-screen menu and select from a variety of titles for stored video programs for individual viewing on demand. Advanced remote control units include button controls with VCR-like functions that enable the viewer to start, stop, pause, rewind, or replay a selected video program or segment. In the future, VOD-based interactive television services may be integrated with or delivered with other advanced interactive television services, such as webpage browsing, e-mail, television purchase (“t-commerce”) transactions, and multimedia delivery.

With the increasing interactive functionality and customer reach of interactive television services, advertisers and content providers are find it increasingly attractive to employ on-demand advertising, program content, and TV transactions for home viewers. VOD content delivery platforms are being designed to seamlessly and conveniently deliver a wide range of types of advertising, content, and transaction services on demand to home viewers.

*Id.* at 2:9–35.

The named inventor of the asserted patents, Mr. Diaz, admitted that he did not invent the “cable” system or “VOD program guides” of the patents. ECF No. 152-5 (Diaz July 29, 2015 Tr.) at 492:12-14.

BBiTV’s expert on infringement, Dr. Hugh Smith, admitted that Mr. Diaz did not invent “cable television distribution system[s],” “video on demand,” or “electronic program guide[s].” ECF No. 152-4 (Smith Tr.) at 19:25-20:18, 28:3-7.

Mr. Diaz admitted that at the time of his alleged invention the Web-based content management system referenced in the ’388, ’750, ’751, and ’026 patents was available “off the market.” ECF No. 111-6 (Diaz July 30, 2015 Tr.) at 776:19-777:4.

Dr. Smith also admitted that “there would have been sites that allowed for video to be uploaded over the web” in the 1990s, and Mr. Diaz’s alleged invention did not improve web browsers or “how video content is compressed and then uploaded in packets over the web.” ECF No. 152-4 (Smith Tr.) at 38:1-39:9.

The specification of the ’825 patent states: “Hierarchical addressing is already well familiar to computer users through the hierarchical ordering of files stored in layers of folders on computers.” ’825 patent at 17:51-54. The specification of the ’026 patent similarly states: “The hierarchical addressing string of terms resembles URL addressing commonly used on the Internet.” ’026 patent at 17:52-53. The specification of the ’026 patent states: “Typically, the publisher will select the categories and subcategories for categorizing the title of the video content from a standard categorization hierarchy . . . .” *Id.* at 3:61-64.

Mr. Diaz admitted that he did not invent “hierarchical categories and subcategories.” ECF No. 152-2 (Diaz July 30, 2015 Tr.) at 774:15-18. Smith admitted that Procter & Gamble already had a hierarchically organized inventory user interface in the 1980s. ECF No. 152-4 (Smith Tr.) at 18:8-19:24. Dr. Smith also admitted that Mr. Diaz did not invent the idea of “moving through data . . . in a drill down manner.” *Id.* at 26:2-7.

The specification of the ’388 patent states that a “template” is “an interactive television screen design.” ’388 patent at 11:3-5. One can obtain templates off-the-shelf from “a template design firm.” *Id.* at 7:62-67. BBiTV’s expert on validity, Dr. Shamos, admitted that the purpose of templates is to “maintain[] a consistent look.” ECF No. 111-2 (Shamos Rep.), ¶ 1063. Dr. Smith admitted that “[t]emplates were a known entity” at the time of the alleged invention. ECF No. 152-4 (Smith Tr.) at 26:11-17.

The Templatized EPG Display standardizes the display of uploaded information, such as titles and cover art, at different levels of the Drill Down hierarchy and, because the use of templates, further minimizes the burden on the digital TV service provider to accommodate the increase in the amount of content made available on-demand, while ensuring that subscribers are not forced to scroll through endless and unformatted lists of content. ECF No. 202 at 11.

### III. ADDITIONAL MATERIAL FACTS

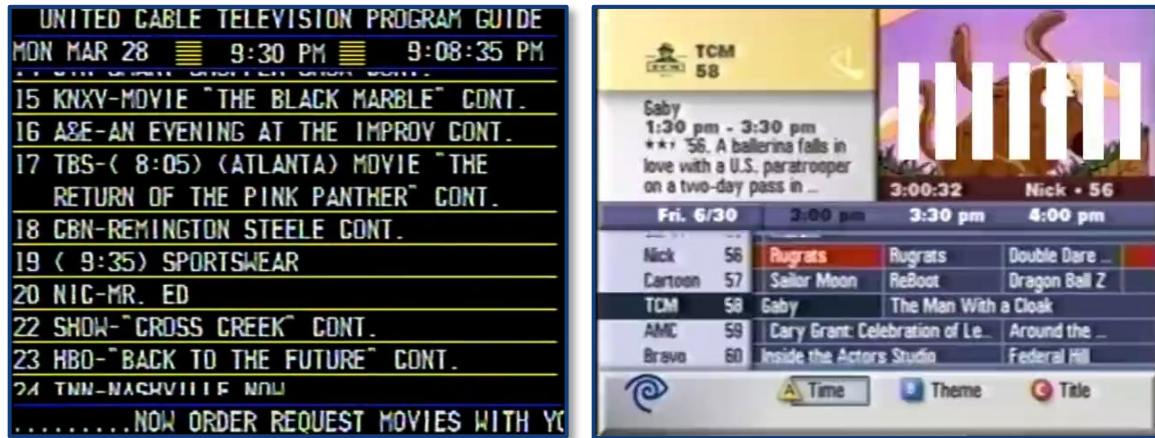
For purposes of summary judgment, the Court adopts the following additional material facts and inferences in favor of BBiTV.

EPG is a specialized type of software computer technology used to locate TV programming in a similar way that an electronic spreadsheet is used to access and manipulate information on a computer. ECF No. 202 at 2.

In 2004, VOD menus included only a few dozen titles. The inventor recognized a problem that while a few dozen titles is manageable for uploading information about the content to the TV provider's system and for viewers to select content of their choice, in the future a menu listing thousands of titles would be difficult to populate and difficult for users to use and navigate. *Id.* at 3. The inventor recognized that it was desirable to find a way for vast numbers of content publishers to transmit their programs to home TV, and to enable home TV viewers to find something of interest for viewing among the vast numbers of new programs. *Id.* The inventor recognized that VOD and EPG technologies could also be improved by enabling large scale expansion of the underlying technology, which is software. *Id.* at 4.

At the time, EPGs, which are a specialized software used in set-top boxes in connection with providing video on demand to viewers, were rudimentary and not well suited for TV providers

to display rapidly growing quantities of movies and information about movies for viewers to select from. Examples of early EPGs are as follows:



*Id.* at 4. The inventor recognized the problems associated with creating an effective EPG -- how VOD content (e.g., movies) and description of content (e.g., information such as title, director, actors, etc.) would be uploaded to TV providers' systems for use populating the EPG without undue labor by the TV provider, and how content and descriptive information about content would be organized and presented in an EPG in the most usable way to assist viewers to navigate the EPG software. *Id.* The inventor's goal in the '026 Patent was to improve the VOD platform by offering a gateway for greatly expanding TV viewing from a relatively small number of studio-produced program channels to a large number of new commercial publishers. *Id.* at 6.

By carrying over the hierarchical address metadata into EPG navigation, the invention allows the content to be automatically listed in the EPG under the common addressing scheme to enable viewers to find any program of interest, relieving the VOD provider of overhead burden. *Id.* This improved how content and information describing content would be uploaded to a TV provider's system for use in an EPG significantly reducing the labor required to arrange the content and descriptive information in an EPG in a usable manner. *Id.*

#### IV. CONCLUSIONS OF LAW

##### A. No Collateral Estoppel Applies

The Court holds that collateral estoppel from *Broadband v. Oceanic* does not prevent BBiTV from defending related patents against § 101 challenges in this case. 135 F. Supp. 3d 1175. These related patents vary sufficiently in their claim scope compared to the '336 patent such that the Court cannot find that the identical issue was previously adjudicated.

Nonetheless, due to the similarity and substantial overlap of the issues, the Court treats *Broadband v. Oceanic*, 135 F. Supp. 3d 1175, as very persuasive authority.

##### B. The Asserted Claims of the '825 Are Directed to an Abstract Idea.

The asserted claims of the '825 patent are directed to the abstract idea of collecting and using a viewer's video history to suggest categories of video content. BBiTV characterization the focus of the '825 patent as “allowing the viewer to zero in on relevant content using a categorical organization scheme based on usage history,” which uses different words to describe this idea. ECF No. 200 (“Aug. 30, 2022 Hearing Tr.”) at 30:15-22.

The claims recite the use of a computer to do what humans—*i.e.*, clerks at video rental stores—have done for years: recommending certain types of videos based on a user's rental history. *See Intell. Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016) (holding that “methods of organizing human activity” are abstract ideas); *USC IP*, 2021 WL 6690275, at \*4 (citing analogy to “a librarian identifying books for a student in a school library”). If someone likes Jackie Chan movies, then a video rental store clerk may suggest other similar movies to that person, such as Bruce Lee movies.

The Federal Circuit has held patents directed to collecting information about a user's past behavior and providing content based on that information to be abstract and ineligible under § 101.

*Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1369-70 (Fed. Cir. 2015) (holding that “customizing web page content as a function of navigation history and information known about the user” was an abstract idea akin to newspaper inserts tailored based on known information about the customer); *Bridge & Post, Inc. v. Verizon Commc’ns, Inc.*, 778 F. App’x 882, 886-87 (Fed. Cir. 2019) (holding that claim reciting “retrieving historic information for the user [including] patterns of usage,” “generating a user profile based on the historic information,” and “analyzing . . . historic information . . . to determine a directed media component to be provided to the user” was directed to the abstract idea of “tailoring information based on [provided] data”) (citation omitted); *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1363 (Fed. Cir. 2020) (holding that “delivering targeted advertising using a computer only as a tool” was ineligible subject matter); *see also BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1291 (Fed. Cir. 2018) (holding that “considering historical usage information while inputting data” was an abstract idea).

The asserted ’825 patent claims are analogous to those the Federal Circuit held invalid in *Free Stream Media Corp. v. Alphonso Inc.*, 996 F.3d 1355 (Fed. Cir. 2021). The claims at issue in that case recited “(1) gathering information about television users’ viewing habits; (2) matching the information with other content (i.e., targeted advertisements) based on relevancy to the television viewer; and (3) sending that content to a second device.” *Id.* at 1361-62. The Federal Circuit reversed the district court’s ruling of patent eligibility, holding that the claims were directed to the abstract idea of targeted advertising. *Id.* at 1361.

Like the *Free Stream Media* claims, claim 1 of the ’825 patent recites (1) gathering information about television users’ viewing habits (“a log of selection data corresponding to the viewer’s consumption of the video-on-demand programs”); (2) matching the information with an ordered list of category names (“determining . . . an order of relevance of a plurality of category

names” based on the “selection data”); and (3) sending the ordered list to the user (“for said respective individual viewer selection of video-on-demand programs”). The ’825 patent claims are abstract and ineligible for the same reasons cited by the Federal Circuit in *Free Stream Media*.

The Court’s opinion in *USC IP Partnership, L.P. v. Facebook, Inc.*, 576 F. Supp. 3d 446 (W.D. Tex. 2021) is also instructive. The patent at issue there related to helping a website visitor “readily identify and navigate to the pages . . . that correspond to the visitor’s intent.” *Id.* at 451. It disclosed “an intent engine 20 that collects and analyzes intent data from visitors as they browse webpages within a namespace,” and infer intents and generate web page recommendations by “referencing historical intent data.” *Id.* For example, the user could “view and select” from a list of recommendations in the form of “a dropdown menu,” where the first item was a webpage “most likely to provide the information that the visitor is seeking.” *Id.* at 453.

This Court granted summary judgment of invalidity under § 101 in *USC IP*, holding the claims were directed to the abstract idea of “collecting, analyzing and using intent data.” *Id.* at 456. The Court noted that “finding information that matches the user’s intent [] is a longstanding problem that existed long before the advent of computers and is not unique to the Internet.” *Id.* at 455. Despite reciting a black box “intent engine,” the claims provided “no explanation of how ‘processing’ steps are performed or how it causes the intent engine to determine an ‘inferred intent’ or ‘at least one recommended webpage.’” *Id.* at 455-46.

In the ’825 patent, the usage history database collects “the viewer’s consumption of the video-on-demand programs,” similar to the “intent data” collected in *USC IP*. ’825 patent, cl. 1. The TV service provider system then determines “an order of relevance of a plurality of category names” to show the user, similar to the ranked “drop down menu” of recommendations in *USC IP*. *Id.* Like the black box “intent engine” in *USC IP*, the asserted claims of the ’825 patent do not



explain *how* to generate the ranked categories based on usage data—they claim the bare result of doing so. The asserted claims of the ’825 patent are thus directed to an abstract idea.

Many courts have held patents directed to collecting information about a user’s past behavior and providing content based on that information to be abstract and ineligible. *See, e.g., OpenTV, Inc. v. Netflix Inc.*, 76 F. Supp. 3d 886, 893-94 (N.D. Cal. 2014) (holding that “a method and system for profiling online users . . . based on their observed [internet] surfing habits and for selectively delivering content” in the form of a “dynamically generated” “individual list of items” was directed to an abstract idea); *Netflix, Inc. v. Rovi Corp.*, 114 F. Supp. 3d 927, 946 (N.D. Cal. 2015) (holding that “a system and method for providing personal recommendations based on a user’s viewing history” was directed to an abstract idea), *aff’d*, 670 F. App’x 704 (Fed. Cir. 2016); *Morsa v. Facebook, Inc.*, 77 F. Supp. 3d 1007, 1013 (C.D. Cal. 2014) (“[M]atching consumers with a given product or service ‘has been practiced as long as markets have been in operation.’”) (citation omitted), *aff’d*, 622 F. App’x 915 (Fed. Cir. 2015); *Sound View Innovations, LLC v. Facebook, Inc.*, 204 F. Supp. 3d 655, 662 (D. Del. 2016) (holding that “offering more meaningful information to an individual based on his own preferences” and the preferences of others was an abstract idea).

The ’825 patent claims are not directed to a new or improved graphic user interface. The claims simply require display of a generic list of categories and provide no other detail about the claimed interface. The Federal Circuit has held similar user interface claims ineligible. *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1234, 1241-43 (Fed. Cir. 2016) (invalidating under § 101 claim reciting a menu including “menu categories” and “menu items”). *Core Wireless* and *Data Engine* do not apply to this case. The claim in *Core Wireless* improved the user interface to show summary data even for an application “in an un-launched state.” *Core Wireless Licensing S.A.R.L.*

*v. LG Elecs., Inc.*, 880 F.3d 1356, 1362-63 (Fed. Cir. 2018). The claim in *Data Engine* improved the user interface by adding a “notebook tab” to navigate between spreadsheet pages. *Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1008 (Fed. Cir. 2018). These cases teach that a claim to a user interface must describe a specific structure improving the interface itself. *Id.* at 1010-11. Here, however, the ’825 patent claims a generic list of categories, such as shown in its Figure 5. This category list does not improve the interface of existing electronic program guides in any meaningful way.

The Court recognizes that the VOD and EPG are a “specialized type of software computer technology.” ECF No. 202 at 2. However, the claims merely implement abstract ideas in software without improvements to or unconventional combinations of underlying hardware.

Thus, at *Alice* step one, the asserted claims of the ’825 patent are directed to the abstract idea of collecting information about a user’s viewing history and using that information to present categories of video content.

**C. The Asserted Claims of the ’825 Do Not Recite Any Inventive Concept or Technological Improvement.**

The asserted claims of the ’825 patent do not recite any inventive concept at *Alice* step two. The ’825 patent admits that tracking systems that could collect the users’ viewing history were “conventional.” ’825 patent at 7:28-38. The claims recite conventional databases for storing data, conventional servers for processing data, and conventional televisions for displaying data.

First, BBiTV contends that the claimed invention improves EPG and VOD software. The ’825 inventor sought to implement a categorization scheme, allowing the EPG to present the VOD content by category, and further individualizing the EPG based on usage history and presenting the categories in an order of relevance based on the viewing history

That the computerized process claimed in the '825 patent could purportedly streamline the manual recommendation process or handle a larger selection of titles does not make the claims any less abstract. *See Capital One*, 792 F.3d at 1367 (“[S]imply appending generic computer functionality to lend speed or efficiency to the performance of an otherwise abstract concept does not meaningfully limit claim scope for purposes of patent eligibility.”) (citation omitted); *id.* at 1370 (“[T]he fact that the web site returns the pre-designed ad more quickly than a newspaper could send the user a location-specific advertisement insert does not confer patent eligibility.”); *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362-64 (Fed. Cir. 2015) (“[R]elying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.”). The inventor may have recognized a business need to scale up a laborious process by using computers to process categories of data, but merely implementing an existing process on a computer to realize the inherent computational power of computers is not an inventive concept. *See Alice*, 573 U.S. 208.

The '825 patent also does not disclose or claim any improvement to database technology. The claimed electronic program guide database and usage history database are generic databases without any particular, let alone improved, structure. *See* '825 patent at 20:58-67. The databases of the '825 patent merely “provide[] a generic environment in which the claimed method is performed.” *BSG Tech*, 899 F.3d at 1286; *see also Capital One*, 792 F.3d at 1371 (listing “database” as an example of “conventional computer components”); *Netflix*, 114 F. Supp. 3d at 946-47 (finding that “viewing history database” and “program listing database” were no different from a generic computer). Aside from the databases, the Court can discern no meritorious argument about any other improvement hardware. BBiTV’s arguments about the VOD and EPG are arguments about software.

Similarly, the '825 patent does not disclose or claim any new way of, or technological improvements to, the concept of logging in or starting new sessions. Claim 1 recites reordering the categories “at the start of each new session when said respective individual viewer logs onto their respective viewer-individualized electronic program guide.” '825 patent, cl. 1. This claim element invokes logging in as a generic way to identify a user, which is ancillary to the overall goal of providing an individualized program listing. *See OpenTV*, 76 F. Supp. 3d at 894 (claim directed to an abstract idea despite reciting “wherein said individual list is dynamically generated for each user on user login”).

Counsel for BBiTV argued at the hearing that “rebuild[ing] the electronic program guide menu, selectively reordering how that information is presented” is a technological improvement. Aug. 30, 2022 Hearing Tr. at 31:5-18, 44:12-21. But taking a list and changing the order of entries on that list could be performed by a human with paper and a pencil; this is not a technological improvement. *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1139 (Fed. Cir. 2016) (holding that claims are directed to an abstract idea where the idea could be “performed mentally or by pencil and paper,” and the claims do not involve “an improvement in the computer as a tool.”).

BBiTV argues that the '825 patent discloses a purportedly inventive “two-database architecture,” but it does not specify any unconventional way in which the patent uses generic databases. ECF No. 133 at 16. The specification does not explain any benefit of using two databases instead of one. The two databases are just conventional databases with functional names. *See Dropbox, Inc. v. Synchronoss Techs., Inc.*, 815 F. App'x 529, 532-33 (Fed. Cir. 2020) (holding that “functional abstraction” of a “black box” does not define a technological solution); *Netflix*, 114 F. Supp. 3d at 946-47 (finding that “functional descriptors” of “viewing history

database” and “program listing database” did not make generic databases “something more particular”).

When considering the claimed elements as an ordered combination, the claims still lack an inventive concept. BBiTV argues that “combin[ing] individualization with [a] categorization scheme” is an inventive concept. ECF No. 133 at 15-16. BBiTV’s alleged inventive concept is simply a restatement of the abstract idea itself: using viewing history information to present categories of content. Combining two abstract ideas—categorization and individualization—is not inventive. *See RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea . . . to another abstract idea . . . does not render the claim non-abstract.”).

When considering the ordered combination of a login process and recommending content, the claims still lack an inventive concept. The claims invoke databases and a login process in a logical order to achieve the goal of recommending content based on viewing history. The viewing history data must be stored somewhere, and a database located at a server is a conventional solution. Further, users must be able to identify themselves, and logging in is existing technology for doing so. The recited limitations are inherent and logically required to accomplish the abstract idea. Continuing the earlier video store clerk analogy, the login process is like seeing a patron returning in through the doors of the video store with the Jackie Chan movie—an event that naturally proceeds the clerk recommending a Bruce Lee movie.

The asserted dependent claims are also non-inventive. Dependent claim 10 allows users to identify themselves by “select[ing] their name from a list of previously registered viewers.” ’825 patent, cl. 10. This claim describes a process of automating the input of user names, and “mere automation of manual processes using generic computers does not constitute a patentable

improvement in computer technology.” *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017).

Dependent claim 15 recites “automatically generating an additional category or subcategory” based on usage history data. ’825 patent, cl. 15. Creating additional categories or subcategories is still part of the abstract idea of recommending content. This is akin to the video store clerk making up suggestions on the spot when a customer returns a Jackie Chan movie. He would encourage renting Bruce Lee movies, kung fu movies, eastern karate movies, western action movies, or whatever other category he can come up with to improve business.

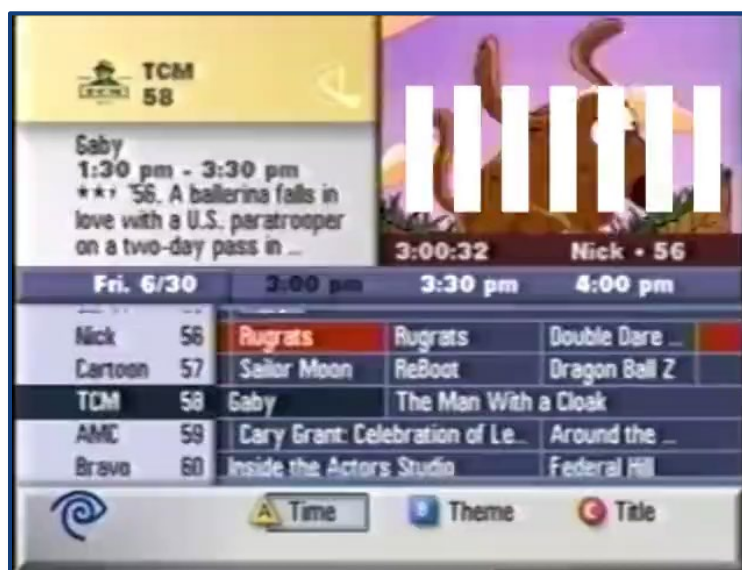
Dependent claim 17 recites “a user profile database” which is also used for determining the “order of relevance of the category names.” *Id.*, cl. 17. Maintaining user profiles is a conventional technique to provide targeted information. *Bridge & Post*, 778 F. App’x at 887 (“The remaining limitations, including . . . ‘generating a user profile . . .,’ and ‘storing the user profile . . .,’ are generic computer functions performed in the service of implementing targeted marketing . . .”). The ’825 patent admits that third party firms were able to create user profiles using the viewing history data. ’825 patent at 7:38-41. The claim also does not explain what additional data are stored in the user profile database or how such data are combined with the usage history data to determine the order of relevance. Such functional claiming does not provide an inventive concept to the abstract idea.

Therefore, the asserted claims of the ’825 patent do not recite any inventive concept at step two of *Alice*. The claims are invalid under 35 U.S.C. § 101.

**D. The Asserted Claims of the '388, '750, '751, and '026 Patents Are Directed to an Abstract Idea.**

The asserted claims of the '388, '750, '751, and '026 patents are directed to the abstract idea of receiving hierarchical information and organizing the display of video content. The focus of these claims is (1) receiving video content and associated metadata from a content provider, and (2) displaying titles hierarchically at a client device according to the provided metadata. In other words, this directed to a computerized implementation of the business process of receiving video content and information from people who want to show videos, such as using an intake form or template, and then using that form/template information to present to viewers a hierarchy of information about available videos.

An example of an early EPG is shown below. It includes information that a content provider would need to give or that the TV guide provide would need to obtain, such as the title of the video content, the time for showing the video, the channel, theme, and a description of the video.



ECF No. 202 at 4. The problem was that parties were providing, receiving, and processing this information in a laborious way. *See id.* Using a computer to receive and process this information in a standardized format allowed people to realize the inherent computational power of computers to do it faster and at scale.

The Federal Circuit’s decision in *In re TLI Communications. LLC Patent Litigation*, 823 F.3d 607, 610-11 (Fed. Cir. 2016) makes clear that the asserted claims of the ’388, ’750, ’751, and ’026 patents are abstract. The claim in *TLI* recited recording images in a telephone, transmitting the images along with “classification information” to a server, extracting the “classification information,” and storing the images in the server according to the “classification information.” *Id.* at 610. The Federal Circuit held that the claim was directed to the abstract idea of “classifying an image and storing the image based on its classification.” *Id.* at 612. Like the claims in *TLI*, which recited the sending of classification information along with images, here the asserted claims require a content provider to upload metadata including category information for organizing the uploaded content.

In addition to uploading metadata and video content, the claims here also recite organizing video titles by displaying them in a hierarchical manner. In *Ameranth*, the patent at issue described a digital menu for use in the restaurant industry, including “categories such as appetizers and entrees [and] items such as chicken Caesar salad.” 842 F.3d at 1235. The claim recited “menu categories” and “menu items,” “displayable in a window of said graphical user interface in a hierarchical tree format.” *Id.* at 1234. The Federal Circuit held that the claim reciting the “hierarchical tree format” was directed to an abstract idea, and the same is true here. *See id.* at 1241; *see also EMG Tech., LLC v. Etsy, Inc.*, No. 6:16-CV-00484-RWS-JDL, 2017 WL 6261810,



at \*6 (E.D. Tex. Jan. 25, 2017) (holding that “displaying information in a hierarchical tree format on a computer screen” was an abstract idea).

The claims of the asserted patents are not directed to a new and improved graphic user interface. *Core Wireless*, *Data Engine*, and *Trading Technologies* do not apply here. While the claims in those cases provided specific structures to improve the user interfaces—an application summary showing data “in an un-launched state,” *Core Wireless*, 880 F.3d at 1362-63, a “notebook tab” to navigate between spreadsheet pages, *Data Engine*, 906 F.3d at 1008, and a pair of “dynamic display” and “static display,” *Trading Techs. Int’l, Inc. v. CQG, INC.*, 675 F. App’x. 1001, 1003 (Fed. Cir. 2017)—here organizing information in a hierarchy is a longstanding human practice whether it is performed on a piece of paper or on a TV screen.

The claims also recite a “Web-based content management system” or WBCMS as a server system that receives the video content and the metadata from content providers. The claims, however, do not specify how the “Web-based” interface should operate or what “management” tasks are accomplished. Rather, they recite the WBCMS as a conduit of information over the Internet. Therefore, the WBCMS is a generic server to carry out “data collection, recognition, and storage” tasks—quintessential functions of a server. *See Content Extraction*, 776 F.3d at 1347. Using existing Web or Internet technology does not transform that server into eligible subject matter, as “the use of the Internet is not sufficient to save otherwise abstract claims from ineligibility under § 101.” *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014); *see also Capital One*, 792 F.3d at 1370 (finding that an “interactive interface that manages web site content” did not confer eligibility because it “simply describes a generic web server with attendant software”).

With respect to “templates,” as discussed above, BBiTV has repeatedly confirmed that templates are just a generic environment to implement the claimed EPG, and courts have found templates to be an abstract concept. The use of templates is ancillary to the overall goal of displaying titles hierarchically in an EPG. Adding that concept does not save the claims under *Alice*. See *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea . . . to another abstract idea . . . does not render the claim non-abstract.”). Moreover, the use of templates to intake information is a routine and conventional practice.

The Court recognizes that the VOD and EPG are a “specialized type of software computer technology.” ECF No. 202 at 2. However, the software itself merely implements abstract ideas without improvements to or new combinations of underlying hardware.

Therefore, at step one of *Alice*, the asserted claims of the ’388, ’750, ’751, and ’026 patents are directed to the abstract idea of receiving hierarchical information and organizing the display of video content accordingly.

**E. The Asserted Claims of the ’388, ’750, ’751, and ’026 Patents Do Not Recite Any Inventive Concept.**

The asserted claims of the ’388, ’750, ’751, and ’026 patents lack an inventive concept because they recite only generic and conventional components, arranged in a conventional manner, and provide only conventional functionalities.

The claimed WBCMS is a generic server for “data collection, recognition, and storage” using the existing Internet. See *Content Extraction*, 776 F.3d at 1347. Mr. Diaz admitted that at the time of his alleged invention the WBCMS was available “off the market.” ECF No. 111-6 (Diaz July 30, 2015 Tr.) at 776:19-777:4. BBiTV’s expert also admitted that “there would have been sites that allowed for video to be uploaded over the web” in the 1990s, and Mr. Diaz’s alleged

invention did not improve web browsers or “how video content is compressed and then uploaded in packets over the web.” ECF No. 152-4 (Smith Tr.) at 38:1-39:9. Such admissions preclude any factual dispute as to whether a WBCMS is conventional at *Alice* step two. *See, e.g., Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018) (finding certain claims ineligible based on inventor’s admission that “parsers and the functions they perform existed for years before his patent”); *see also Elec. Power Grp.*, 830 F.3d at 1355 (finding no inventive concept where “[n]othing in the claims, understood in light of the specification, requires anything other than off-the-shelf, conventional computer, network, and display technology”).

The Hawaii Court expressly found WBCMS to be conventional at *Alice* step two. *Broadband v. Oceanic*, 135 F. Supp. 3d at 1192–94 (D. Haw. 2015). This is important because BBiTV has described the ’336 patent as “directed to . . . the web-based content management system.” Aug. 30, 2022 Hearing Tr. at 21:24-22:10. This Court is persuaded by the reasoning of the Hawaii Court and similarly finds that the use of a WBCMS not an inventive concept.

Hierarchical navigation and the use of templates cannot provide the inventive concept, either; as discussed above, they are fundamental human practices that courts have long held to be abstract. “[T]he abstract idea itself . . . cannot supply the inventive concept that renders the invention significantly more than that ineligible concept.” *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 774 (Fed. Cir. 2019) (internal quotations and citation omitted).

Indeed, the specification of the ’825 patent confirms: “Hierarchical addressing is already well familiar to computer users through the hierarchical ordering of files stored in layers of folders on computers.” ’825 patent at 17:51-54. The specification of the ’026 patent added: “The hierarchical addressing string of terms resembles URL addressing commonly used on the Internet.” ’026 patent at 17:52-53. Mr. Diaz admitted that he did not invent “hierarchical categories and

subcategories.” ECF No. 152-2 (Diaz July 30, 2015 Tr.) at 774:15-18. BBiTV’s expert also admitted that Procter & Gamble already had a hierarchically organized inventory user interface in the 1980s. ECF No. 152-4 (Smith Tr.) at 18:8-19:24.

The asserted claim elements are also non-inventive when considered as an ordered combination. The discrete WBCMS, drill down navigation, and templated VOD displays features do not combine in an unconventional way. Instead, they describe a logical sequence of handling information: WBCMS for collecting information, drill down navigation for organizing information, and templated VOD displays for presenting information. They all perform their intended functions in a conventional way to implement the abstract idea. Drilling down through categories of information is not something unique to a user interface and does not solve a problem inherently rooted in computer technology.

None of the dependent claims recite any inventive concept either. Claim 13 of the ’388 patent, claim 8 of the ’750 patent, and claim 8 of the ’751 patent each recite a “templated video-on-demand display” comprising a “background” and “areas” for displaying metadata. Claim 3 of the ’751 patent recites “different display templates” corresponding to “different levels of the hierarchical structure.” Similar to the three-layer structure in the ’026 patent, the additional specificities regarding templates do not alter the abstract nature of the template concept.

Claim 17 of the ’388 patent recites a “search interface” to search video content. But “using [an] index to search for and retrieve data” is also an abstract idea. *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1328 (Fed. Cir. 2017).

Finally, claim 7 of the ’750 patent and claim 6 of the ’026 patent recites “topics” pertaining to “more than one video content provider,” and claim 7 of the ’026 patent recites “category terms” corresponding to “one or more content providers.” Using topics and categories to classify

information is a fundamental human practice. There is also nothing inventive about having multiple content providers instead of one.

Therefore, the asserted claims of the '388, '750, '751, and '026 patents do not recite any inventive concept at step two of *Alice*. The claims are invalid under 35 U.S.C. § 101.

#### **F. No Monopolization**

The Court agrees with BBiTV that the claims do not monopolize or preempt a field of technology or fundamental tool of science. While monopolization is a driving concern behind section 101, BBiTV presents no authority that allows the Court to reach a different decision based on the lack of monopolization alone.

### **V. CONCLUSION**

This is a case where no disputes of material fact hinder summary judgment about what was routine and conventional in the Section 101 context. Instead, the Court relies on a record full of facts from the background of the patents, statements by the plaintiff's witnesses, and statements in the plaintiff's briefs. The Court generally credits BBiTV's arguments that its inventor was the first to implement certain existing business practices on computer systems to make the process faster and scalable, but this alone is insufficient to transform those business practices into something more than a computer implementation of an abstract idea. In this way, the case is like *Alice*, where the claims covered the practice of hedging as implemented on a computer. 573 U.S. 208. Against a background where the Hawaii Court already held similar claims ineligible in a related patent, the patent owner here has not persuaded this Court that differences in the claimed technology require a different outcome.

Defendants' Motion is **GRANTED**. ECF No. 111. The Court holds the '825, '388, '750, '751, and '026 Patents invalid under 35 U.S.C. § 101.

SIGNED this 30th day of September, 2022.



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ALAN D ALBRIGHT  
UNITED STATES DISTRICT JUDGE

**UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

**BROADBAND iTV, INC.,**

*Plaintiff,*

v.

**AMAZON.COM, INC.,  
AMAZON.COM SERVICES LLC AND  
AMAZON WEB SERVICES, INC.,**

*Defendants.*

Case No. 6:20-cv-00921-ADA

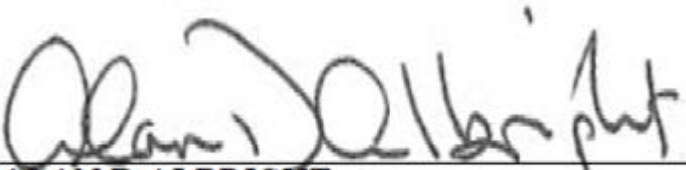
**FINAL JUDGMENT**

On September 30, 2022, the Court entered a Memorandum Opinion and Order (ECF No. 204) that granted Amazon.com, Inc.; Amazon.com Services LLC; and Amazon Web Services, Inc.’s (collectively, “Defendants”) Motion for Summary Judgment of Invalidity under 35 U.S.C. § 101 and held that certain claims U.S. Patent Nos. 9,973,825 (the “’825 patent”), 9,648,388 (the “’388 patent”), 10,536,750 (the “’750 patent”), 10,536,751 (the “’751 patent”), 10,028,026 (the “’026 patent”) are invalid under 35 U.S.C. § 101. Specifically, claims 1, 10, 15 and 17 of the ’825 patent, claims 1, 13 and 17 of the ’388 patent, claims 1, 7 and 8 of the ’750 patent, claims 1, 3 and 8 of the ’751 patent, and claims 1, 6 and 7 of the ’026 patent (collectively, “the Asserted Claims”) were found invalid under 35 U.S.C. § 101.

In accordance with the Memorandum Opinion and Order (ECF No. 204) and pursuant to Rule 54(b) of the Federal Rules of Civil Procedure, it is hereby **ORDERED** and **ADJUDGED** that:

1. All the Asserted Claims are invalid under 35 U.S.C. § 101.
2. This FINAL JUDGMENT starts the time for filing any appeal.

Signed this 24th day of October, 2022.



ALAN D ALBRIGHT  
UNITED STATES DISTRICT JUDGE



(12) **United States Patent**  
**Perez**

(10) **Patent No.:** **US 10,028,026 B2**  
(45) **Date of Patent:** **\*Jul. 17, 2018**

(54) **SYSTEM FOR ADDRESSING ON-DEMAND TV PROGRAM CONTENT ON TV SERVICES PLATFORM OF A DIGITAL TV SERVICES PROVIDER**

(71) Applicant: **Broadband iTV, Inc.**, Honolulu, HI (US)

(72) Inventor: **Milton Diaz Perez**, Tiburon, CA (US)

(73) Assignee: **Broadband iTV, Inc.**, Honolulu, HI (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **15/192,598**

(22) Filed: **Jun. 24, 2016**

(65) **Prior Publication Data**

US 2016/0309232 A1 Oct. 20, 2016

**Related U.S. Application Data**

(60) Continuation of application No. 14/827,090, filed on Aug. 14, 2015, now Pat. No. 9,420,318, which is a (Continued)

(51) **Int. Cl.**  
**H04N 7/18** (2006.01)  
**H04N 7/173** (2011.01)  
(Continued)

(52) **U.S. Cl.**  
CPC ..... **H04N 21/47202** (2013.01); **G06Q 30/02** (2013.01); **H04N 7/17318** (2013.01);  
(Continued)

(58) **Field of Classification Search**  
USPC ..... 725/74–104  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,706,121 A 11/1987 Young  
4,751,578 A 6/1988 Reiter et al.  
(Continued)

**FOREIGN PATENT DOCUMENTS**

EP 1 164 796 A1 12/2001  
EP 1 361 759 A1 11/2003  
(Continued)

**OTHER PUBLICATIONS**

Petition for Inter Partes Review, IPR2014-01222, *Unified Patents, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

(Continued)

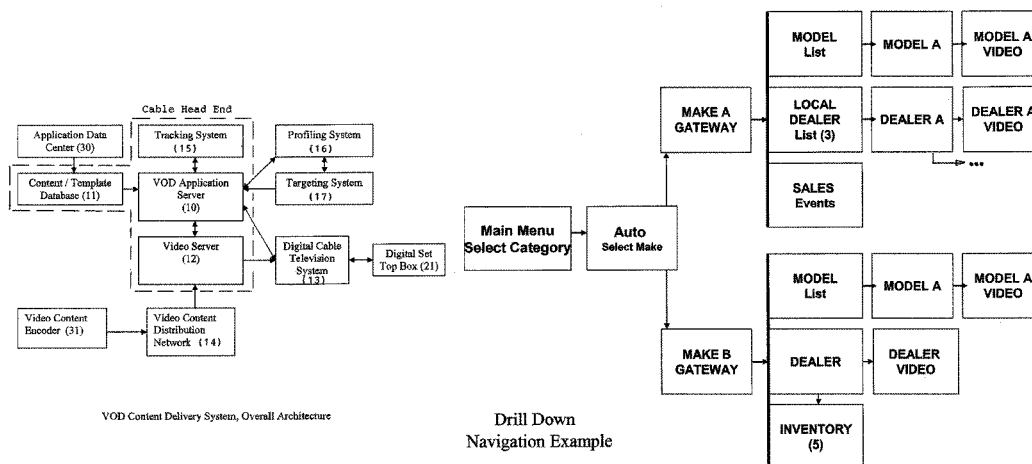
*Primary Examiner* — Mushfikh Alam

(74) *Attorney, Agent, or Firm* — Amster, Rothstein & Ebenstein LLP

(57) **ABSTRACT**

Video content is uploaded via the Internet to a video-on-demand (VOD) server identified by a title and a hierarchical address of categories and subcategories for categorizing the title. The VOD server converts and stores the video content at a storage address in a video content database linked to the title. The title is listed in a location of an electronic program guide (EPG) using the same categories and subcategories as in its hierarchical address. Any TV subscriber can access the EPG and navigate through its categories and subcategories to find a title for viewing on the TV. This can enable many new blogging or podcasting-like programs by popular “Hosts” to be self-published on the Internet and readily navigated for display on TV. The EPG can also store TV program addresses as bookmarks and allow them to be shared with other subscribers or with friends and contacts online by sending to their email addresses.

**17 Claims, 13 Drawing Sheets**



**Related U.S. Application Data**

continuation of application No. 12/632,745, filed on Dec. 7, 2009, now Pat. No. 9,113,228, which is a division of application No. 11/685,188, filed on Mar. 12, 2007, now Pat. No. 7,631,336, which is a continuation-in-part of application No. 10/909,192, filed on Jul. 30, 2004, now Pat. No. 7,590,997.

(51) **Int. Cl.**

*H04N 21/472* (2011.01)  
*H04N 21/222* (2011.01)  
*H04N 21/482* (2011.01)  
*H04N 21/462* (2011.01)  
*H04N 21/8545* (2011.01)  
*H04N 21/61* (2011.01)  
*H04N 21/239* (2011.01)  
*H04N 21/258* (2011.01)  
*H04N 21/414* (2011.01)  
*H04N 21/475* (2011.01)  
*G06Q 30/02* (2012.01)  
*H04N 21/2547* (2011.01)  
*H04N 21/4722* (2011.01)  
*H04N 21/81* (2011.01)  
*H04N 21/262* (2011.01)  
*H04N 21/2665* (2011.01)  
*H04N 21/643* (2011.01)  
*H04N 21/431* (2011.01)  
*H04N 21/434* (2011.01)  
*H04N 21/6379* (2011.01)  
*H04N 21/84* (2011.01)  
*H04N 21/854* (2011.01)  
*H04N 21/4786* (2011.01)

(52) **U.S. Cl.**

CPC ..... *H04N 21/222* (2013.01); *H04N 21/239* (2013.01); *H04N 21/2393* (2013.01); *H04N 21/2547* (2013.01); *H04N 21/25875* (2013.01); *H04N 21/25891* (2013.01); *H04N 21/2665* (2013.01); *H04N 21/26291* (2013.01); *H04N 21/41407* (2013.01); *H04N 21/4312* (2013.01); *H04N 21/4345* (2013.01); *H04N 21/4622* (2013.01); *H04N 21/4722* (2013.01); *H04N 21/4753* (2013.01); *H04N 21/4758* (2013.01); *H04N 21/4786* (2013.01); *H04N 21/47214* (2013.01); *H04N 21/482* (2013.01); *H04N 21/4821* (2013.01); *H04N 21/4825* (2013.01); *H04N 21/6125* (2013.01); *H04N 21/6175* (2013.01); *H04N 21/6379* (2013.01); *H04N 21/64322* (2013.01); *H04N 21/812* (2013.01); *H04N 21/84* (2013.01); *H04N 21/8545* (2013.01); *H04N 21/85406* (2013.01)

## (56)

**References Cited****U.S. PATENT DOCUMENTS**

5,479,268 A 12/1995 Young et al.  
 5,485,219 A 1/1996 Woo  
 5,550,735 A 8/1996 Slade et al.  
 5,559,549 A 9/1996 Hendricks et al.  
 5,566,287 A 10/1996 Delpuch  
 5,589,892 A 12/1996 Knee et al.  
 5,592,551 A 1/1997 Lett et al.  
 5,594,936 A 1/1997 Rebec et al.  
 5,616,876 A 4/1997 Cluts  
 5,648,824 A 7/1997 Dunn et al.  
 5,670,730 A 9/1997 Grewe et al.  
 5,686,954 A 11/1997 Yoshinobu et al.  
 5,689,799 A 11/1997 Dougherty et al.

5,699,125 A 12/1997 Rzeszewski et al.  
 5,701,161 A 12/1997 Williams et al.  
 5,721,827 A 2/1998 Logan et al.  
 5,734,853 A 3/1998 Hendricks et al.  
 5,739,451 A 4/1998 Winksy et al.  
 5,758,258 A 5/1998 Shoff et al.  
 5,759,101 A 6/1998 Von Kohorn  
 5,778,181 A 7/1998 Hidary et al.  
 5,790,176 A 8/1998 Craig  
 5,790,935 A 8/1998 Payton  
 5,798,785 A 8/1998 Hendricks et al.  
 5,798,921 A 8/1998 Johnson et al.  
 5,805,763 A 9/1998 Lawler et al.  
 5,812,123 A 9/1998 Rowe et al.  
 5,813,014 A 9/1998 Gustman  
 5,822,123 A 10/1998 Davis et al.  
 5,826,102 A 10/1998 Escobar  
 5,832,499 A 11/1998 Gustman  
 5,850,218 A 12/1998 LaJoie et al.  
 5,859,898 A 1/1999 Checco  
 5,867,821 A 2/1999 Ballantyne  
 5,884,033 A 3/1999 Duvall et al.  
 5,892,536 A 4/1999 Logan et al.  
 5,914,746 A 6/1999 Matthews  
 5,918,303 A 6/1999 Yamaura et al.  
 5,926,230 A 7/1999 Nijima et al.  
 5,931,901 A 8/1999 Wolfe  
 5,956,716 A 9/1999 Kenner et al.  
 5,969,283 A 10/1999 Looney et al.  
 5,991,801 A 11/1999 Rebec et al.  
 6,005,561 A 12/1999 Hawkins et al.  
 6,008,803 A 12/1999 Rowe et al.  
 6,018,768 A 1/2000 Ullman et al.  
 6,025,837 A 2/2000 Matthews et al.  
 6,029,045 A 2/2000 Picco et al.  
 6,038,591 A 3/2000 Wolfe  
 6,049,823 A 4/2000 Hwang  
 6,062,868 A 5/2000 Toriumi  
 6,088,455 A 7/2000 Logan et al.  
 6,092,080 A 7/2000 Gustman  
 6,100,883 A 8/2000 Hoarty  
 6,118,442 A 9/2000 Tanigawa  
 6,118,450 A 9/2000 Proehl et al.  
 6,128,012 A 10/2000 Seidensticker, Jr. et al.  
 6,148,081 A 11/2000 Szymanski et al.  
 6,161,142 A 12/2000 Wolfe  
 6,163,316 A 12/2000 Killian  
 6,172,677 B1 \* 1/2001 Stautner ..... G06F 3/033 348/E5.105  
 6,177,931 B1 1/2001 Alexander et al.  
 6,201,538 B1 3/2001 Wugofski  
 6,205,582 B1 3/2001 Hoarty  
 6,208,799 B1 3/2001 Marsh et al.  
 6,233,736 B1 5/2001 Wolzien  
 6,237,146 B1 5/2001 Richards  
 6,248,946 B1 6/2001 Dwek  
 6,269,275 B1 7/2001 Slade  
 6,289,346 B1 9/2001 Milewski et al.  
 6,305,016 B1 10/2001 Marshall et al.  
 6,317,885 B1 11/2001 Fries  
 6,332,175 B1 12/2001 Birrell et al.  
 6,357,042 B2 3/2002 Srinivasan  
 6,377,530 B1 4/2002 Burrows  
 6,418,556 B1 7/2002 Bennington et al.  
 6,445,398 B1 9/2002 Gerba et al.  
 6,446,083 B1 9/2002 Leight et al.  
 6,476,826 B1 11/2002 Plotkin et al.  
 6,539,548 B1 3/2003 Hendricks et al.  
 6,546,393 B1 4/2003 Khan  
 6,564,380 B1 5/2003 Murphy  
 6,606,746 B1 8/2003 Idepski et al.  
 6,678,463 B1 1/2004 Pierre et al.  
 6,738,978 B1 5/2004 Hendricks  
 6,754,904 B1 \* 6/2004 Cooper ..... G06Q 10/10 348/E7.071  
 6,760,721 B1 7/2004 Chasen et al.  
 6,766,100 B1 7/2004 Komar et al.  
 6,772,433 B1 8/2004 LaJoie et al.  
 6,774,926 B1 8/2004 Ellis et al.

# US 10,028,026 B2

Page 3

(56)	<b>References Cited</b>			7,917,933 B2 *	3/2011	Thomas .....	G06F 3/0481 725/87
	U.S. PATENT DOCUMENTS			7,921,448 B2	4/2011	Fickle et al.	
				7,925,973 B2	4/2011	Allaire et al.	
6,804,825 B1	10/2004	White et al.		7,926,079 B2	4/2011	Lebar	
6,834,110 B1	12/2004	Marconcini et al.		7,945,929 B2	5/2011	Knudson et al.	
6,845,396 B1	1/2005	Kanojia et al.		7,949,722 B1	5/2011	Ullman et al.	
6,898,762 B2	5/2005	Ellis et al.		7,950,033 B2	5/2011	Pierre et al.	
6,910,191 B2 *	6/2005	Segerberg .....	H04N 5/44543 348/E5.105	7,962,414 B1	6/2011	Allibhoy et al.	
6,928,433 B2	8/2005	Goodman et al.		7,974,962 B2	7/2011	Krakirian et al.	
6,931,451 B1	8/2005	Logan et al.		7,987,492 B2 *	7/2011	Liwerant .....	H04M 3/567 725/105
6,976,229 B1	12/2005	Balabanovic et al.		7,996,861 B1	8/2011	Delpuch	
6,985,586 B2	1/2006	Hill		8,006,263 B2	8/2011	Ellis et al.	
6,990,677 B1	1/2006	Pietraszak et al.		8,010,988 B2	8/2011	Cox	
7,020,888 B2	3/2006	Reynolds et al.		8,020,187 B2	9/2011	Cox	
7,028,327 B1	4/2006	Dougherty et al.		8,042,132 B2 *	10/2011	Carney .....	G06Q 30/02 709/217
7,047,411 B1	5/2006	DeMello et al.		8,051,450 B2	11/2011	Robarts et al.	
7,055,166 B1	5/2006	Logan et al.		8,090,605 B2	1/2012	Tota et al.	
7,055,169 B2	5/2006	Delpuch et al.		8,107,786 B2	1/2012	Sardera	
7,058,223 B2	6/2006	Cox		8,112,776 B2	2/2012	Schein et al.	
7,065,709 B2	6/2006	Ellis		8,122,034 B2	2/2012	Aravamudan et al.	
7,076,734 B2	7/2006	Wolff et al.		8,151,290 B1	4/2012	Ujihara	
7,089,309 B2	8/2006	Ramaley et al.		8,191,098 B2	5/2012	Cooper et al.	
7,100,185 B2	8/2006	Bennington et al.		8,205,237 B2	6/2012	Cox	
7,103,905 B2 *	9/2006	Novak .....	H04N 7/17318 348/E7.071	8,214,254 B1	7/2012	Mowry	
7,103,906 B1	9/2006	Katz et al.		8,219,446 B1	7/2012	Mowry	
7,120,925 B2	10/2006	D'Souza et al.		8,249,924 B1	8/2012	Mowry	
7,155,674 B2	12/2006	Breen et al.		8,281,339 B1 *	10/2012	Walker .....	G06Q 10/00 348/564
7,200,575 B2	4/2007	Hans et al.		8,332,268 B2	12/2012	Carruthers et al.	
7,213,005 B2	5/2007	Mourad et al.		8,340,994 B2	12/2012	Tota et al.	
7,222,163 B1 *	5/2007	Girouard .....	G11B 27/28 375/E7.025	8,346,605 B2	1/2013	Krikorian et al.	
7,225,455 B2	5/2007	Bennington et al.		8,365,230 B2	1/2013	Chane et al.	
7,243,139 B2	7/2007	Ullman et al.		8,434,118 B2 *	4/2013	Gonder .....	H04L 29/06027 725/87
7,269,854 B2	9/2007	Simmons et al.		8,464,302 B1	6/2013	Liwerant et al.	
7,277,870 B2	10/2007	Mourad et al.		8,473,868 B1	6/2013	Kauffman	
7,305,691 B2	12/2007	Cristofalo		8,479,246 B2	7/2013	Hudson et al.	
7,308,413 B1	12/2007	Tota et al.		8,566,871 B2	10/2013	Knowles et al.	
7,337,462 B2	2/2008	Dudkiewicz et al.		8,621,541 B2	12/2013	Ullman et al.	
7,367,043 B2 *	4/2008	Dudkiewicz .....	G06F 17/30017 348/E5.006	8,644,354 B2	2/2014	George et al.	
7,386,512 B1	6/2008	Allibhoy et al.		8,707,354 B1	4/2014	Moreau et al.	
7,392,532 B2	6/2008	White et al.		8,713,595 B2	4/2014	Lemmons et al.	
7,409,437 B2	8/2008	Ullman et al.		8,843,978 B2	9/2014	Hardin	
7,421,729 B2	9/2008	Zenoni		8,955,029 B2	2/2015	Lewis	
7,426,558 B1	9/2008	Allibhoy et al.		8,997,136 B2	3/2015	Brooks et al.	
7,444,402 B2 *	10/2008	Rennels .....	H04H 20/31 709/219	9,055,325 B2	6/2015	Gaydou et al.	
7,471,834 B2	12/2008	Sull et al.		9,066,118 B2	6/2015	Diaz Perez	
7,490,346 B2	2/2009	Alao et al.		9,078,016 B2	7/2015	Diaz Perez	
7,493,643 B2	2/2009	Ellis		9,106,959 B2	8/2015	Diaz Perez	
7,516,472 B2	4/2009	Danker et al.		9,113,228 B2	8/2015	Diaz Perez	
7,548,565 B2	6/2009	Sull et al.		9,232,275 B2	1/2016	Perez	
7,590,997 B2	9/2009	Diaz Perez		9,292,866 B2	3/2016	Allaire et al.	
7,594,245 B2	9/2009	Sezan et al.		2001/0018771 A1	8/2001	Walker et al.	
7,596,797 B1 *	9/2009	Kapner, III .....	H04N 5/44543 725/44	2001/0033736 A1	10/2001	Yap	
7,606,883 B1	10/2009	Allibhoy et al.		2001/0049625 A1	12/2001	Mowry	
7,624,337 B2	11/2009	Sull et al.		2001/0052132 A1	12/2001	Fryer	
7,631,336 B2	12/2009	Diaz Perez		2002/0007485 A1 *	1/2002	Rodriguez .....	H04N 5/44543 725/1
7,644,429 B2	1/2010	Bayassi et al.		2002/0042921 A1 *	4/2002	Ellis .....	G06F 3/0481 725/87
7,650,621 B2	1/2010	Thomas et al.		2002/0045960 A1	4/2002	Phillips et al.	
7,690,020 B2	3/2010	Lebar		2002/0056104 A1	5/2002	Burnhouse et al.	
7,698,723 B2	4/2010	Hicks, III et al.		2002/0057892 A1	5/2002	Mano et al.	
7,720,707 B1	5/2010	Mowry		2002/0059621 A1 *	5/2002	Thomas .....	G06F 3/0481 725/87
7,725,740 B2	5/2010	Kudelski et al.		2002/0066106 A1	5/2002	Kanojia et al.	
7,761,899 B2	7/2010	Buehl et al.		2002/0069218 A1	6/2002	Sull et al.	
7,774,819 B2	8/2010	Perez		2002/0078456 A1	6/2002	Hudson	
7,801,838 B2	9/2010	Colbath et al.		2002/0083451 A1	6/2002	Gill	
7,801,910 B2	9/2010	Houh et al.		2002/0087661 A1	7/2002	Matichek et al.	
7,814,519 B2	10/2010	Rao et al.		2002/0088009 A1	7/2002	Dudkiewicz et al.	
7,835,920 B2	11/2010	Snyder et al.		2002/0088010 A1 *	7/2002	Dudkiewicz .....	G06F 17/30017 725/138
7,885,963 B2	2/2011	Sanders		2002/0092019 A1	7/2002	Marcus	
7,900,229 B2	3/2011	Dureau					
7,908,626 B2	3/2011	Williamson et al.					

(56)		References Cited			
		U.S. PATENT DOCUMENTS			
2002/0104099	A1 *	8/2002	Novak .....	H04N 7/17318 725/136	2005/0154679 A1 7/2005 Bielak
2002/0120925	A1	8/2002	Logan		2005/0160458 A1 7/2005 Baumgartner
2002/0138843	A1	9/2002	Samaan et al.		2005/0160465 A1 7/2005 Walker
2002/0138844	A1	9/2002	Otenasek		2005/0166230 A1 7/2005 Gaydou et al.
2002/0147975	A1	10/2002	Seo		2005/0188415 A1 8/2005 Riley
2002/0152224	A1	10/2002	Roth et al.		2005/0193015 A1 9/2005 Logston
2002/0152318	A1	10/2002	Menon et al.		2005/0203918 A1 9/2005 Holbrook
2002/0163532	A1 *	11/2002	Thomas .....	G06F 17/30814 715/723	2005/0204388 A1 9/2005 Knudson et al.
2002/0174430	A1 *	11/2002	Ellis .....	G11B 27/005 725/46	2005/0210524 A1 9/2005 Dolph
2002/0174433	A1 *	11/2002	Baumgartner .....	H04N 5/76 725/58	2005/0216941 A1 9/2005 Flanagan et al.
2002/0184634	A1	12/2002	Cooper		2005/0229209 A1 10/2005 Hildebolt et al.
2002/0184635	A1	12/2002	Istvan		2005/0235318 A1 10/2005 Grauch et al.
2002/0194194	A1 *	12/2002	Fenton .....	G06F 17/3089	2005/0235319 A1 10/2005 Carpenter et al.
2002/0199188	A1	12/2002	Sie et al.		2005/0239546 A1 10/2005 Hedrick
2003/0009542	A1	1/2003	Kasal et al.		2005/0240961 A1 10/2005 Jerding et al.
2003/0016940	A1	1/2003	Robbins		2005/0240968 A1 10/2005 Knudson et al.
2003/0018971	A1	1/2003	McKenna		2005/0246752 A1 11/2005 Liwerant et al.
2003/0037010	A1 *	2/2003	Schmelzer .....	G06F 17/30026 705/67	2005/0283800 A1 12/2005 Ellis et al.
2003/0055893	A1	3/2003	Sato et al.		2005/0289151 A1 12/2005 Burke
2003/0084126	A1 *	5/2003	Kumar .....	G06Q 30/02 709/219	2006/0004914 A1 1/2006 Kelly et al.
2003/0084449	A1	5/2003	Chane et al.		2006/0015925 A1 1/2006 Logan
2003/0093790	A1	5/2003	Logan et al.		2006/0029093 A1 2/2006 Van Rossum
2003/0101451	A1	5/2003	Bentolila et al.		2006/0085830 A1 4/2006 Bruck et al.
2003/0126605	A1 *	7/2003	Betz .....	H04N 5/44543 725/39	2006/0123455 A1 6/2006 Pai
2003/0149975	A1	8/2003	Eldering et al.		2006/0155850 A1 7/2006 Ma et al.
2003/0149981	A1	8/2003	Finster et al.		2006/0174260 A1 8/2006 Gutta
2003/0154128	A1	8/2003	Liga		2006/0267995 A1 11/2006 Radloff et al.
2003/0154475	A1	8/2003	Rodriguez et al.		2006/0287916 A1 12/2006 Starr et al.
2003/0163375	A1	8/2003	Dombrowski et al.		2007/0016530 A1 1/2007 Stasi et al.
2003/0167449	A1	9/2003	Warren		2007/0038567 A1 2/2007 Allaire et al.
2003/0167471	A1	9/2003	Roth et al.		2007/0157221 A1 7/2007 Ou et al.
2003/0191816	A1	10/2003	Landress		2007/0157249 A1 7/2007 Cordray et al.
2003/0204856	A1	10/2003	Buxton		2007/0198532 A1 * 8/2007 Krikorian .....
2003/0208756	A1	11/2003	MacRae et al.		
2003/0226150	A1	12/2003	Berberet		
2003/0234819	A1	12/2003	Daly		
2004/0015989	A1	1/2004	Kaizu et al.		
2004/0015998	A1	1/2004	Bokor		
2004/0049788	A1	3/2004	Mori et al.		
2004/0073919	A1	4/2004	Gutta et al.		
2004/0078825	A1	4/2004	Murphy		
2004/0103120	A1 *	5/2004	Fickle .....	G06Q 10/10	
2004/0117844	A1	6/2004	Karaoguz et al.		
2004/0133918	A1	7/2004	Danker		
2004/0136698	A1	7/2004	Mock		
2004/0148626	A1	7/2004	Sakao et al.		
2004/0158855	A1 *	8/2004	Gu .....	H04N 5/44543 725/39	
2004/0172419	A1	9/2004	Morris et al.		
2004/0194141	A1	9/2004	Sanders		
2004/0205816	A1	10/2004	Barrett		
2004/0221325	A1 *	11/2004	Nakajima .....	H04H 60/27 725/145	
2004/0268250	A1	12/2004	Danker		
2004/0268413	A1	12/2004	Reid et al.		
2005/0044577	A1	2/2005	Jerding		
2005/0049933	A1	3/2005	Upendran et al.		
2005/0050218	A1	3/2005	Sheldon		
2005/0081237	A1	4/2005	Chen		
2005/0097600	A1	5/2005	Heer		
2005/0097622	A1	5/2005	Zigmond et al.		
2005/0097623	A1	5/2005	Tecot		
2005/0129049	A1	6/2005	Srinivasan et al.		
2005/0131837	A1 *	6/2005	Sanctis .....	G06Q 20/12 705/64	
2005/0138560	A1	6/2005	Lee et al.		
2005/0149987	A1	7/2005	Boccon-Gibod et al.		
2005/0154679	A1	7/2005	Bielak		
2005/0160458	A1	7/2005	Baumgartner		
2005/0160465	A1	7/2005	Walker		
2005/0166230	A1	7/2005	Gaydou et al.		
2005/0188415	A1	8/2005	Riley		
2005/0193015	A1	9/2005	Logston		
2005/0203918	A1	9/2005	Holbrook		
2005/0204388	A1	9/2005	Knudson et al.		
2005/0210524	A1	9/2005	Dolph		
2005/0216941	A1	9/2005	Flanagan et al.		
2005/0229209	A1	10/2005	Hildebolt et al.		
2005/0235318	A1	10/2005	Grauch et al.		
2005/0235319	A1	10/2005	Carpenter et al.		
2005/0239546	A1	10/2005	Hedrick		
2005/0240961	A1	10/2005	Jerding et al.		
2005/0240968	A1	10/2005	Knudson et al.		
2005/0246752	A1	11/2005	Liwerant et al.		
2005/0283800	A1	12/2005	Ellis et al.		
2005/0289151	A1	12/2005	Burke		
2006/0004914	A1	1/2006	Kelly et al.		
2006/0015925	A1	1/2006	Logan		
2006/0029093	A1	2/2006	Van Rossum		
2006/0085830	A1	4/2006	Bruck et al.		
2006/0123455	A1	6/2006	Pai		
2006/0155850	A1	7/2006	Ma et al.		
2006/0174260	A1	8/2006	Gutta		
2006/0267995	A1	11/2006	Radloff et al.		
2006/0287916	A1	12/2006	Starr et al.		
2007/0016530	A1	1/2007	Stasi et al.		
2007/0038567	A1	2/2007	Allaire et al.		
2007/0157221	A1	7/2007	Ou et al.		
2007/0157249	A1	7/2007	Cordray et al.		
2007/0198532	A1 *	8/2007	Krikorian .....	G06Q 30/0273 705/14.69	
2007/0214482	A1	9/2007	Nguyen		
2007/0245399	A1	10/2007	Espelien		
2007/0250864	A1	10/2007	Diaz Perez		
2007/0277201	A1 *	11/2007	Wong .....	H04N 5/44543 725/40	
2008/0022298	A1	1/2008	Cavicchia		
2008/0072260	A1	3/2008	Rosin et al.		
2008/0127257	A1	5/2008	Kvache		
2008/0141325	A1	6/2008	Ludvig et al.		
2008/0148317	A1	6/2008	Opaluch		
2008/0155613	A1	6/2008	Benya et al.		
2008/0163292	A1	7/2008	Stallworth		
2008/0163330	A1	7/2008	Sparrell		
2008/0189749	A1	8/2008	White et al.		
2008/0222687	A1	9/2008	Edry		
2008/0276277	A1	11/2008	Ahn et al.		
2009/0055868	A1 *	2/2009	Wehmeyer .....	H04N 5/44543 725/40	
2009/0158334	A1	6/2009	Rodriguez et al.		
2010/0138863	A1	6/2010	Diaz Perez		
2010/0153999	A1	6/2010	Yates		
2010/0175090	A1	7/2010	Cordray		
2010/0211975	A1	8/2010	Boyer et al.		
2010/0319040	A1	12/2010	Diaz Perez		
2010/0325655	A1	12/2010	Diaz Perez		
2011/0030012	A1	2/2011	Diaz Perez		
2011/0030013	A1	2/2011	Diaz Perez		
2011/0166918	A1	7/2011	Allaire et al.		
2011/0191163	A1	8/2011	Allaire et al.		
2013/0125158	A1	5/2013	Brown		
2013/0254804	A1	9/2013	Diaz Perez		
2013/0254809	A1	9/2013	Diaz Perez		
2013/0254814	A1	9/2013	Diaz Perez		
2015/0128192	A1	5/2015	Diaz Perez		
2015/0237403	A1	8/2015	Perez		
2015/0245099	A1	8/2015	Perez		
2015/0264440	A1	9/2015	Perez		
2015/0281792	A1	10/2015	Gaydou et al.		
2015/0358649	A1	12/2015	Perez		

(56)

**References Cited****U.S. PATENT DOCUMENTS**

2015/0358682 A1 12/2015 Perez  
 2015/0358683 A1 12/2015 Perez

**FOREIGN PATENT DOCUMENTS**

JP	07-284035	10/1995
JP	11-150692	6/1999
JP	03-116121	4/2003
WO	89/12896 A1	12/1989
WO	90/15507 A1	12/1990
WO	9406084 A1	3/1994
WO	99/10822 A1	3/1999
WO	99/41684 A1	8/1999
WO	9950778 A1	10/1999
WO	01/10121 A1	2/2001
WO	01/010124 A1	2/2001
WO	WO01022688	3/2001
WO	WO01038960	5/2001
WO	2002008948 A2	1/2002
WO	03/052572 A1	6/2003
WO	WO03052572	6/2003
WO	WO03069457	8/2003
WO	WO 2007/021974 A2	2/2007

**OTHER PUBLICATIONS**

Petition for Covered Business Method Review, CBM2014-00189, *Hawaiian Telecom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

PTAB Decision Denying Institution of Covered Business Method Patent Review, Apr. 1, 2015, CBM2014-00189, *Hawaiian Telecom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Brief of *Amici Curiae Broadband iTV, Inc., Double Rock Corporation, Island Intellectual Property, LLC, Access Control Advantage, Inc., and Fairway Financial U.S., Inc. In Support of Appellants, Netflix, Inc. v. Rovi Corporation et al.*, No. 2015-1917 (Fed. Cir. Dec. 18, 2015).

Consolidated Brief for *Appellant Broadband iTV, Inc., Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 21, 2016).

Amicus Brief of United Inventors Association of the United States of America in Support of *Appellant Broadband iTV, Inc. and Reversal, Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 27, 2016).

Amicus Brief by *Transition, Inc., Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 28, 2016).

VOD Metadata—Project Primer, Overview of VOD Content Specification 1.0, 1.1, and 2.0, published by Cable Labs, circa 2002-2007, <http://www.cablelabs.com/projects/metadata/primer>.

xOD Capsule, issue dated Apr. 11, 2006, includes article “Bresnan Taps CMC for VOD”, published by Communications, Engineering & Design Magazine, <http://www.cedmagazine.com/newsletter.aspx?id=67468>.

Comcast Media Center, Content Gateway, Content Distribution website, circa 2010, <http://www.comcastmediacenter.com/content-gateway>.

VDO expands Webcasting possibilities, *Broadcasting & Cable*, Nov. 11, 1996.

Jose Alvear, “Web Developer.com Guide to Streaming Multimedia”, Chapters 9 and 11, 1998.

Business Wire, “Ivex Announces ViewOps Internet Video Service; Allows Business Managers to View and Manage Operations Online,” May 2, 2000.

Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable Inc.’s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474), *Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (5 pgs).

Memorandum in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.’s Motion for Summary

Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474-1), *Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (49 pgs).

Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.’s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 475), *Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (12 pgs).

Declaration of Nathan L. Brown (ECF 475-1), *Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (6 pgs).

Exhibits 1 (ECF 475-2), 4 (ECF 475-5), 5 (ECF 475-6), and 6 (ECF 475-7) to Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.’s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336, *Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (133 pgs).

Plaintiff’s Opposition to Defendants Time Warner Cable, Inc. and Oceanic Time Warner Cable, LLC’s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 561), *Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (52 pgs).

Plaintiff Broadband iTV, Inc.’s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.’s Concise Statement of Facts (ECF 562), *Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Declaration of Keith A. Jones (ECF 562-1), Inc.’s Concise Statement of Facts, *Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Exhibits 1-10 (ECF 562-2-ECF-11), 12 (ECF 562-13), 14 (ECF 562-15), 16-17 (ECF 562-17-562-18), and 19-20 (ECF 562-20-562-21) to Plaintiff Broadband iTV, Inc.’s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.’s Concise Statement of Facts, *Broadband iTV, Inc. v. Hawaiian Telecom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (508 pgs).

Patent Owner’s Preliminary Response, Jan. 2, 2015, CBM2014-00189, *Hawaiian Telecom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Decision Denying Institution of Inter Partes Review, Jan. 5, 2015, IPR2014-01222, *Unified Patents v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

International Search Report, dated Mar. 6, 2006, in PCT International Application US20051027376, of Broadband iTV, Inc.

International Search Report, dated Sep. 15, 2009, in PCT International Application US2008/003341, of Broadband iTV, Inc.

International Search Report, dated Nov. 28, 2008, in PCT International Application US2008/007980, of Broadband iTV, Inc.

The Industry Standard, “Web Entertainment Gets Personal”, Jan. 10, 2000, [www.thestandard.com](http://www.thestandard.com).

Affidavit of Milton Diaz Perez Under C.F.R. 132, Mar. 9, 2009, submitted in U.S. Appl. No. 10/909,192, filed Jul. 3, 2004.

Affidavit of Milton Diaz Perez, Ex. A, Wikipedia, “Cable Television in the United States”, history, last modified Jan. 17, 2009, pp. 1-7, [http://en.wikipedia.org/wiki/Cable\\_Television\\_in\\_the\\_United\\_States](http://en.wikipedia.org/wiki/Cable_Television_in_the_United_States).

Affidavit of Milton Diaz Perez, Ex. B, Wikipedia, “Internet Television”, history, last modified Feb. 5, 2009, pp. 1-4, [http://en.wikipedia.org/wiki/Internet\\_TV](http://en.wikipedia.org/wiki/Internet_TV).

Affidavit of Milton Diaz Perez, Ex. C, Wikipedia, “Content Delivery Network”, history, last modified Feb. 10, 2009, pp. 1-6, [http://en.wikipedia.org/wiki/Content\\_Delivery\\_Network](http://en.wikipedia.org/wiki/Content_Delivery_Network).

Affidavit of Milton Diaz Perez, Ex. D, Wikipedia, “Walled Garden (technology)”, history, last modified Feb. 3, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/Walled\\_Garden\\_\(technology\)](http://en.wikipedia.org/wiki/Walled_Garden_(technology)).

Affidavit of Milton Diaz Perez, Ex. E, Wikipedia, “User-generated TV”, history, last modified Feb. 10, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/User-generated\\_TV](http://en.wikipedia.org/wiki/User-generated_TV).

Affidavit of Milton Diaz Perez, Ex. E1, Wikipedia, “ZeD”, history, last modified Jan. 5, 2009, pp. 1-7, <http://en.wikipedia.org/wiki/Zed>.

(56)

## References Cited

## OTHER PUBLICATIONS

Affidavit of Milton Diaz Perez, Ex. E2, Wikipedia, "Current TV", history, last modified Feb. 5, 2009, pp. 1-5, [http://en.wikipedia.org/wiki/Current\\_TV](http://en.wikipedia.org/wiki/Current_TV).

Affidavit of Milton Diaz Perez, Ex. E3, OUTLOUD.TV, tripatlas, circa 2003, <http://tripatlas.com/Outloud.tv>.

EPO Communication for European Application No. 08726793.6, dated May 30, 2016.

EPO Communication for European Application No. 08768802.4, dated May 30, 2016.

TimeWarner, Time Warner Cable Launches Quick Clips, <http://www.timewarner.com/newsroom/press-releases/2006/09/28/time-warner-cable-launches-quick-clips> (published Sep. 28, 2006, last visited Jun. 26, 2015).

Time Warner Cable, Photos & Video Go from Digital Cameras to Television with Free, New Time Warner Cable Product, [http://www.timewarnercable.com/en/about-us/press/photos\\_video\\_go\\_fromdigitalcamerastotelevisionwithfreenewtimewar.html](http://www.timewarnercable.com/en/about-us/press/photos_video_go_fromdigitalcamerastotelevisionwithfreenewtimewar.html) (published Apr. 27, 2007, last visited Jun. 26, 2015).

Adams, Open Cable Architecture (Cisco Press 2000), Chapter 8-16.

ATSC Standard: Program and System Information Protocol for Terrestrial Broadcast and Cable (PSIP) (Dec. 23, 1997).

Attack of the \$500 Killer Network Computers: Time-Warner Cable's Full Service Network, Network Computing (Aug. 19, 2000) Internet Archive, <https://web.archive.org/web/20000819050301/http://www.networkcomputing.com/616/616tw.html>.

CableLabs Video-On-Demand Asset Distribution Interface Specification, Version 1.1 (Sep. 27, 2002).

CableLabs Video-On-Demand Content Specification Version 1.1 (Jan. 7, 2004).

Declaration of Milton Diaz Perez, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Mar. 2, 2015).

Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit A, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit B, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit C, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit E, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit F, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit G, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Fickle et al., U.S. Appl. No. 60/429,966, filed Nov. 27, 2002.

Full Service Network and the Orlando Sentinel add interactive dining guide to GOtv, the Free Library, <http://www.thefreelibrary.com/Full+Service+Network+and+The+Orlando+Sentinel+add+interactive+dining...a018299720> (published May 20, 1996, last visited Mar. 4, 2015).

Full Service Network(FSN) in Orlando, Florida, Hong Kong University of Science and Technology (May 4, 1997) Internet Archive, <https://web.archive.org/web/19970504203603/http://www.ust.hk/~webiway/content/USA/Trial/fsn.html>.

Full Service Network, Time Warner Cable, <http://m.history.timewarnercable.com/the-twc-story/era-1990-1995/Story.aspx?s-story=56> (last visited Mar. 4, 2015).

Full Service Network, Wikipedia, [http://en.wikipedia.org/w/index.php?title=Full\\_Service\\_Network&printable=yes](http://en.wikipedia.org/w/index.php?title=Full_Service_Network&printable=yes) (last visited Mar. 4, 2015).

Tanenbaum, Computer Networks, 4th ed. (Prentice Hall PTR 2003), pp. 1-14.

Time Warner Cable, Draft Asset Distribution System ("Catcher's Mitt") Functional Requirements, Version 1.0 (Jan. 26, 2000).

Time Warner Cable, ISA Data Download Delivery, Version 0.5 (Jun. 3, 2004).

Time Warner Cable, Pegasus Interactive Services Architecture, Version 1.4 (Jun. 5, 2003).

Time Warner Cable, The ISA Tutorial, Version 1.0 (Sep. 13, 2003).

Time Warner Cable's Full Service Network connects live to Innoventions, AllBusiness (published Apr. 10, 1996, archived Mar. 25, 2008) Internet Archive, <https://web.archive.org/web/20080325024937/http://www.allbusiness.com/media-telecommunications/telecommunications/7218809-1.html>.

Time Warner introduces world's first full service network in Orlando; Network offers First . . . , AllBusiness (published Dec. 14, 1994, archived May 22, 2009) Internet Archive, <https://web.archive.org/web/20090522134441/http://www.allbusiness.com/media-telecommunications/telecommunications/7087127-1.html>.

Time Warner will close its Full Service Network, Orlando Business Journal, <http://www.bizjournals.com/orlando/stories/1997/04/28/day7.html> (last visited Mar. 4, 2015).

Time Warner's "Time Machine" for Future Video, The New York Times, <http://www.nytimes.com/.../12/business/time-warner-s-time-machine-for-future-video.html?pagewanted=2&pagewanted=print> (published Dec. 12, 1994, last visited Mar. 4, 2015).

Time Warner Cable, Request for Proposal and Functional Requirements Specification for Video-On-Demand (VOD) Systems, Version 2.0 (Apr. 25, 1997).

Time Warner Cable, Pegasus Movies on Demand Content Specification, Version 1.3 (Sep. 29, 2000).

Time Warner Cable, Pegasus Overall Flow: Movie Delivery, Version 1.0 (Feb. 18, 2004).

Notice of Entry of Judgment Without Opinion for Case No. 2016-1082 of the United States Court of Appeals for the Federal Circuit dated Sep. 26, 2016.

Judgment, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc., Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, Nos. 2016-1082, 2016-1083 (CAFC Sep. 26, 2016) (2 pgs).

Affidavit of Milton Diaz Perez Under 37 C.F.R. 132, Jan. 20, 2012, submitted in U.S. Appl. No. 11/768,895.

Order Granting in Part and Denying in Part Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Sep. 29, 2015) (77 pgs).

Judgment, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Oct. 9, 2015) (4 pgs).

Order Granting Defendant Hawaiian Telcom, Inc.'s Motion for Summary Judgment of Invalidity Under 35 U.S.C. § 101, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, No. 14-00169 (D. Haw. Sep. 29, 2015) (43 pgs).

Judgment, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, No. 14-00169 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, No. 14-00169 (D. Haw. Oct. 9, 2015) (4 pgs).

*Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*; BBiTV Petition for a Writ of Certiorari (Sup. Ct. Apr. 13, 2017 (No. 16-1241)).

Order List 581 U.S. Sup. Ct.—Monday, May 22, 2017—*Broadband iTV, Inc. v. Hawaiian Telcom, Inc., et al.*, Petition for Writ of Certiorari Denied (p. 7).

Ciciora, Farmer, & Large, Modern Cable Television Technology (Morgan Kaufmann Publishers, Inc. 1999), 18 pages.

\* cited by examiner

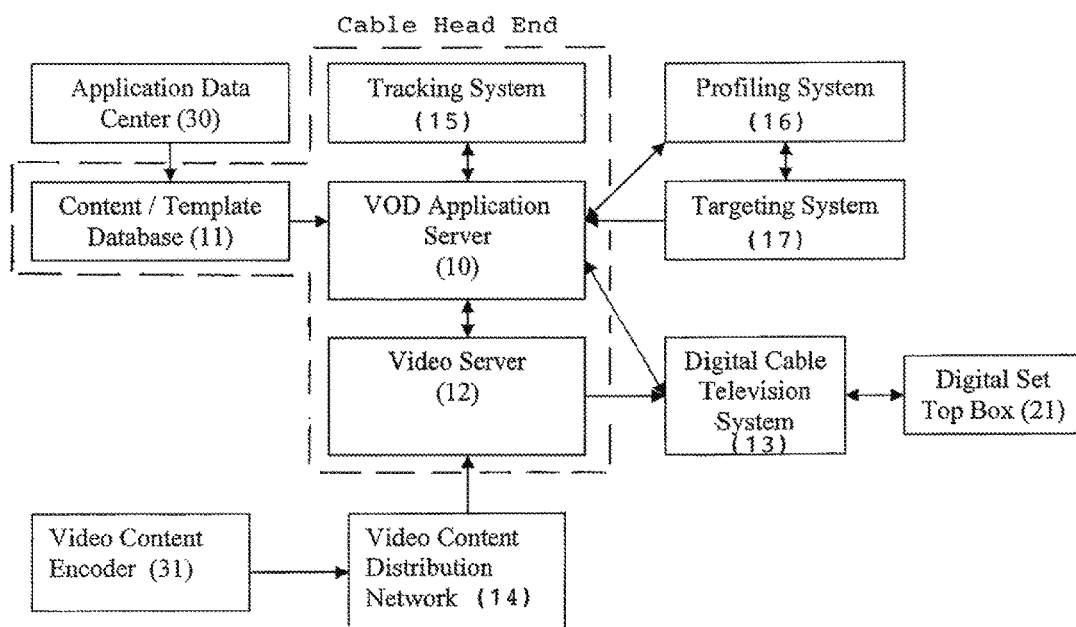


Figure 1A: VOD Content Delivery System, Overall Architecture

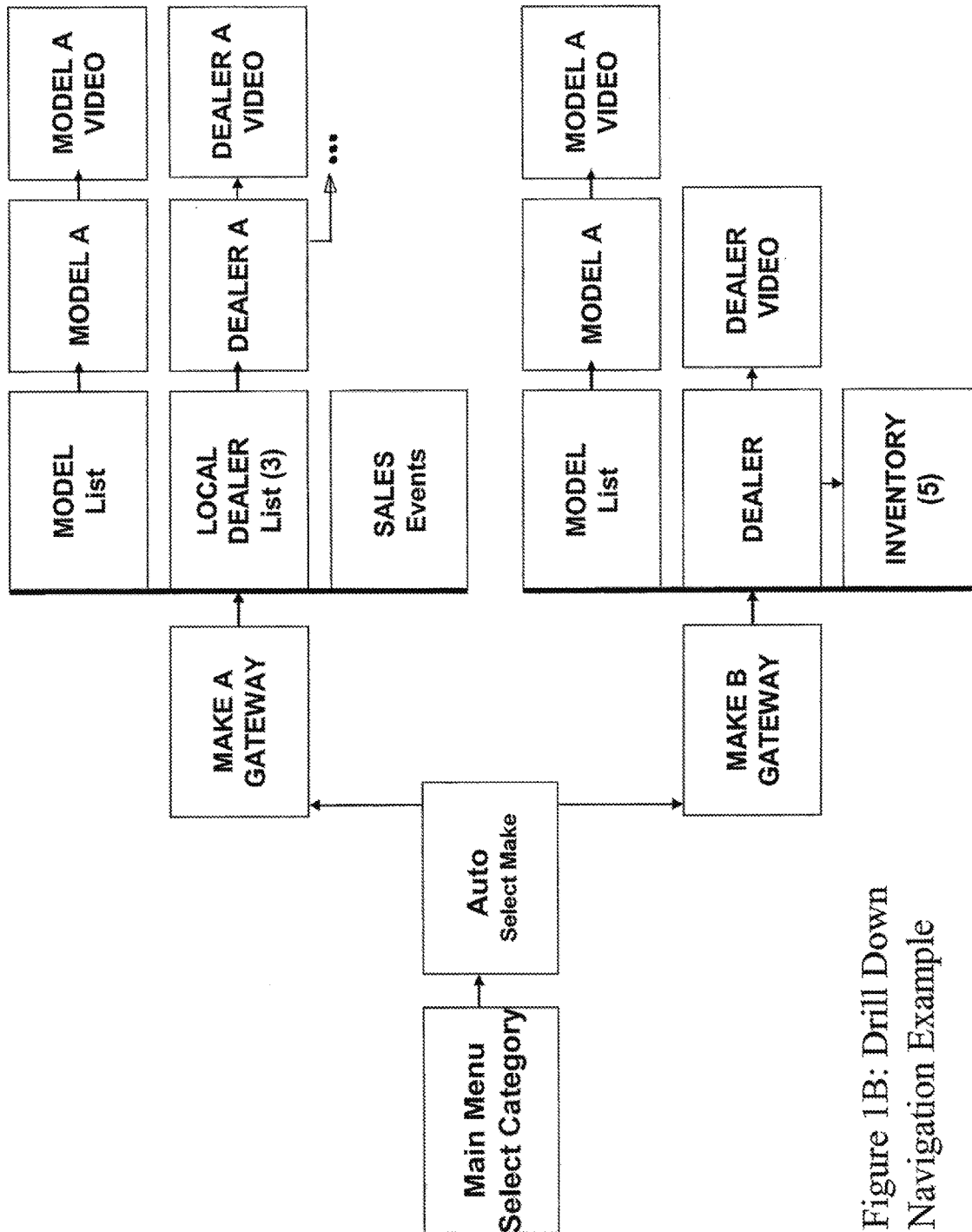


Figure 1B: Drill Down  
Navigation Example



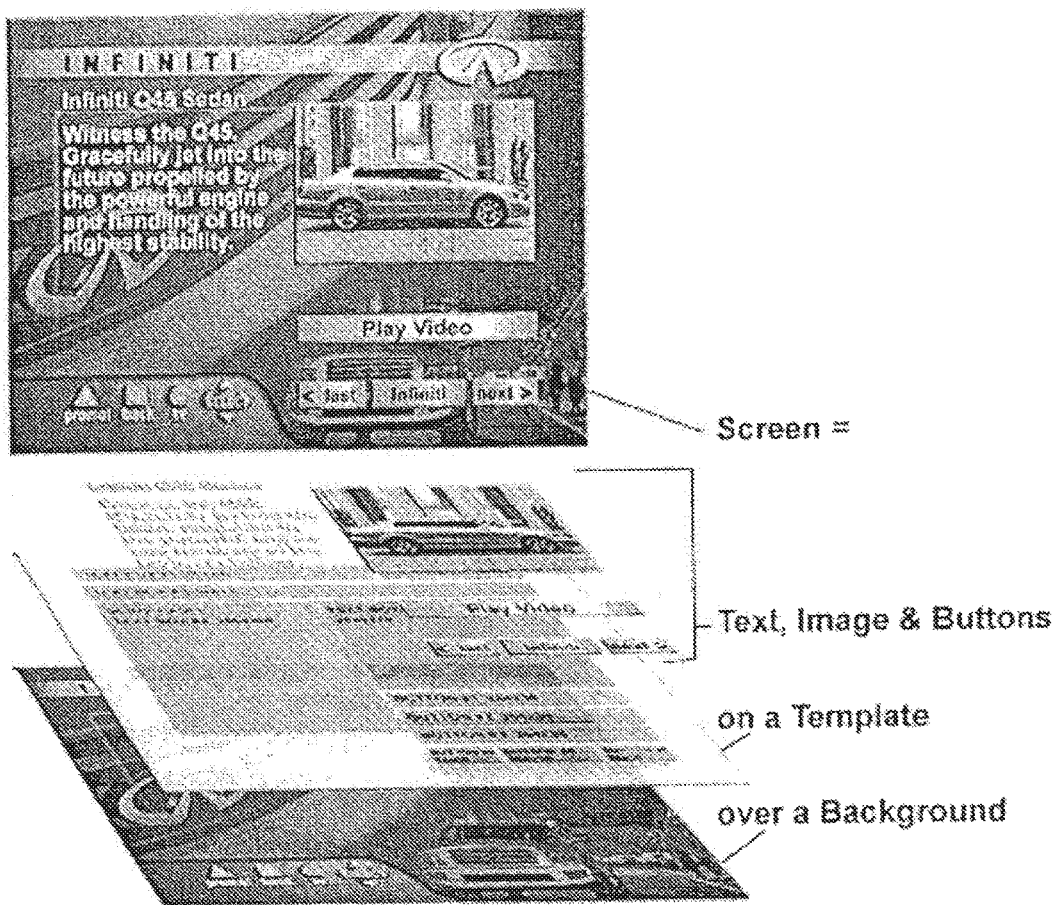


Figure 1C: Template Layer Model

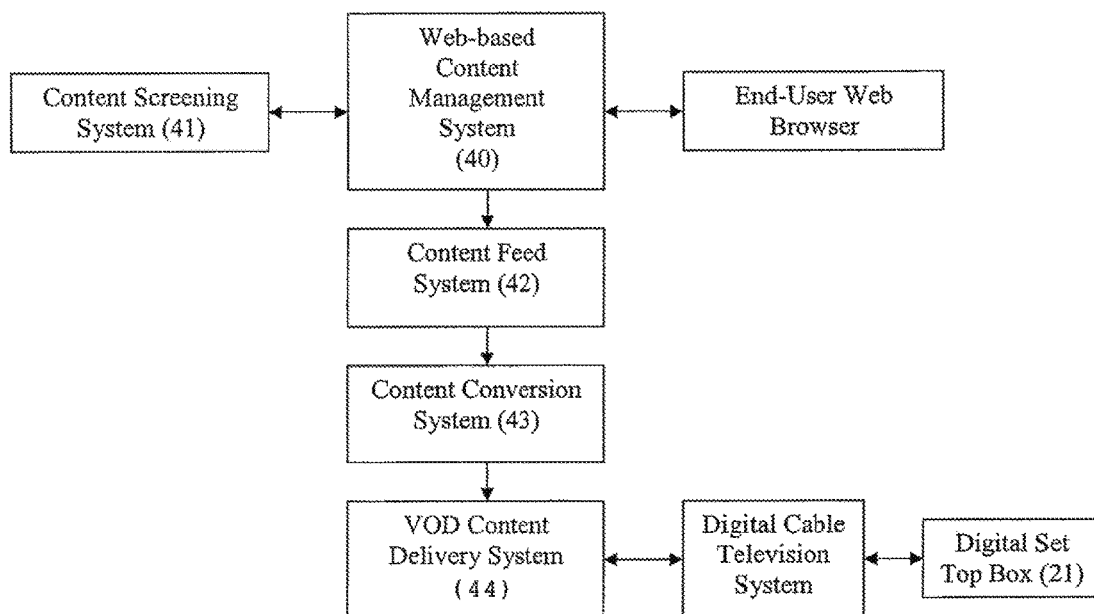


Figure 2A: Classified Ad System, Overall Architecture

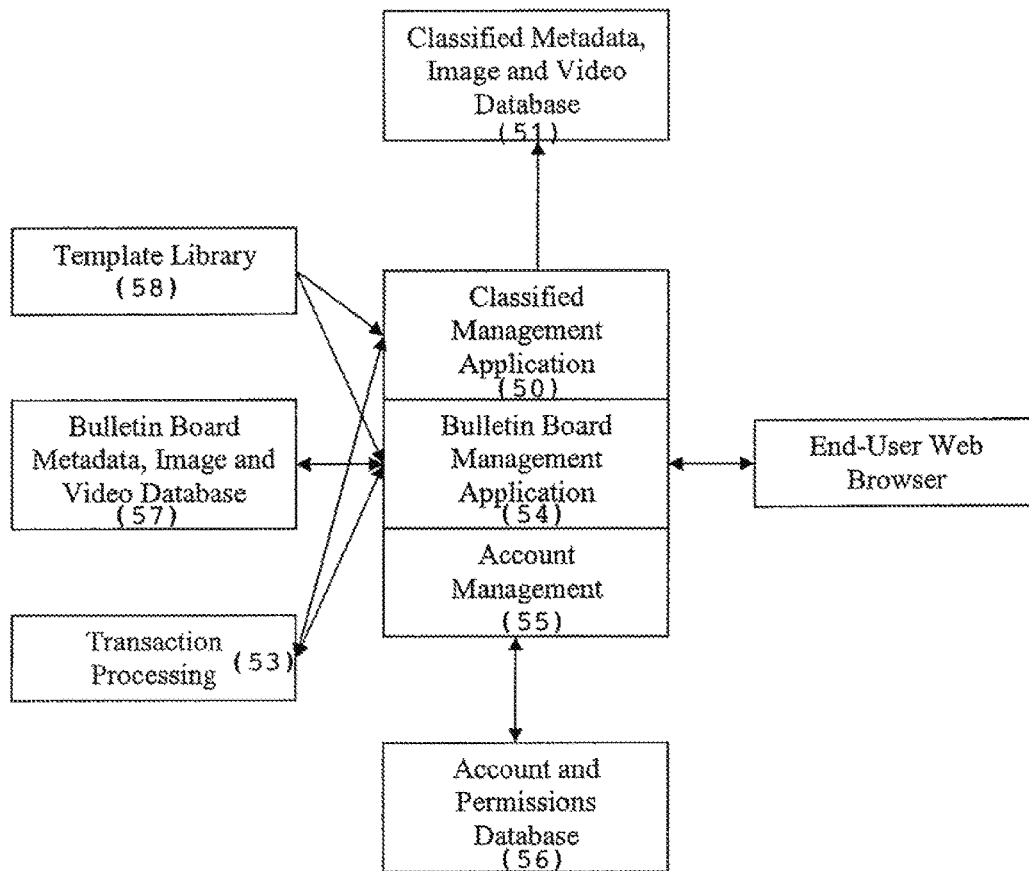


Figure 2B: Web-based Content Management System

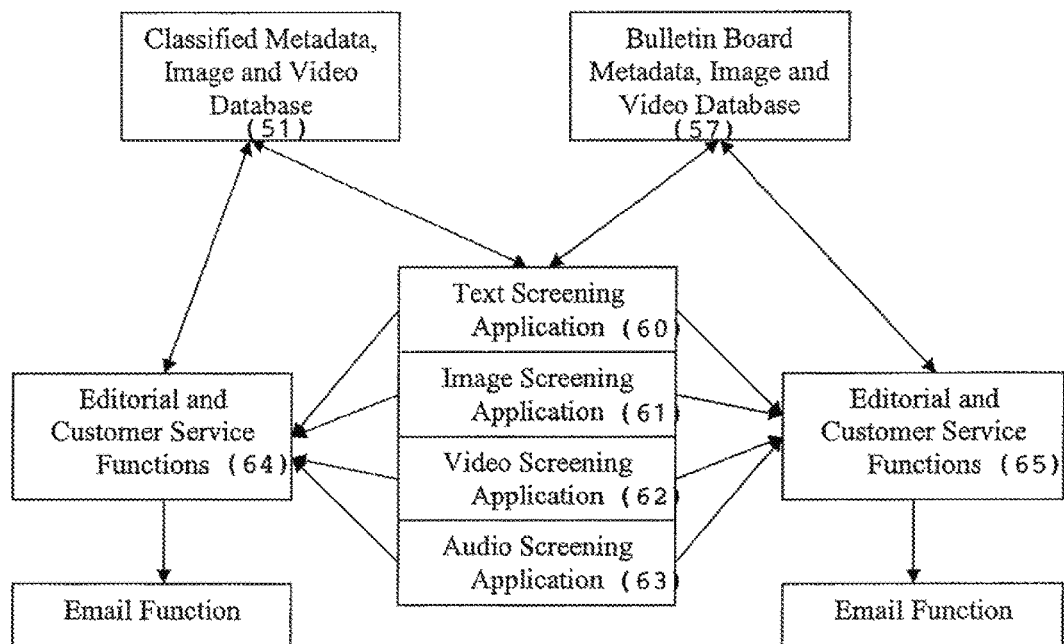


Figure 2C: Content Screening System

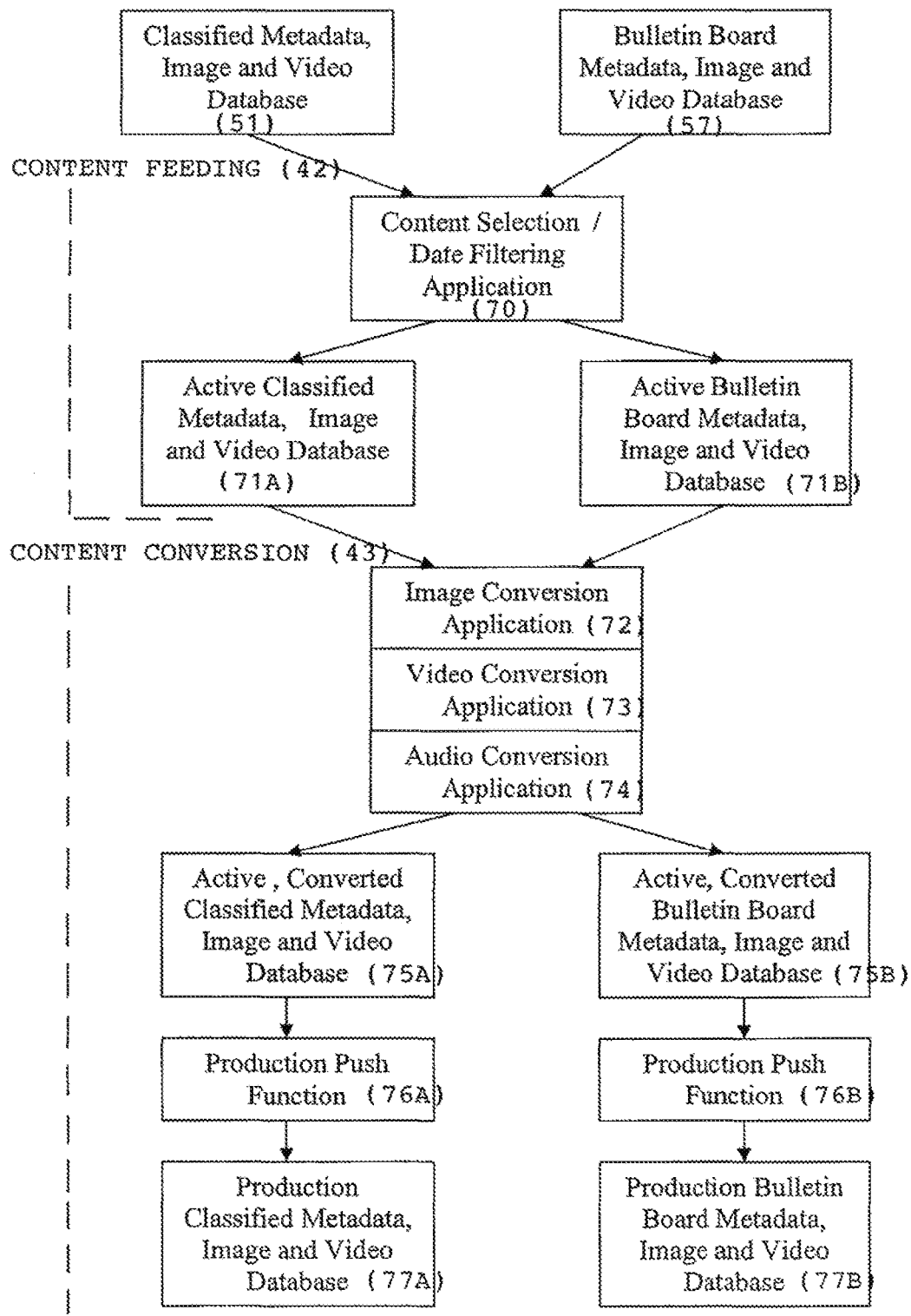


Figure 2D: Content Feed and Conversion System

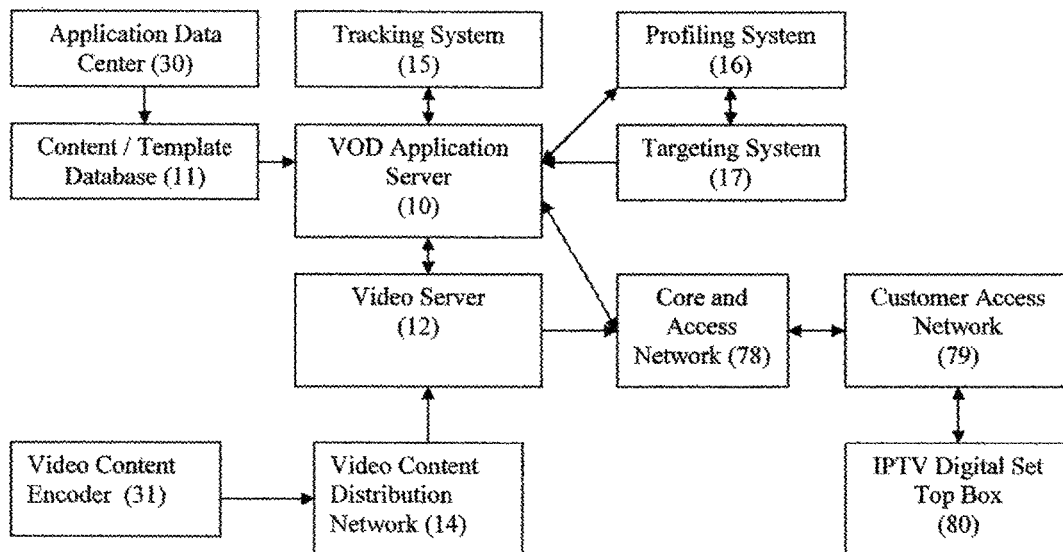
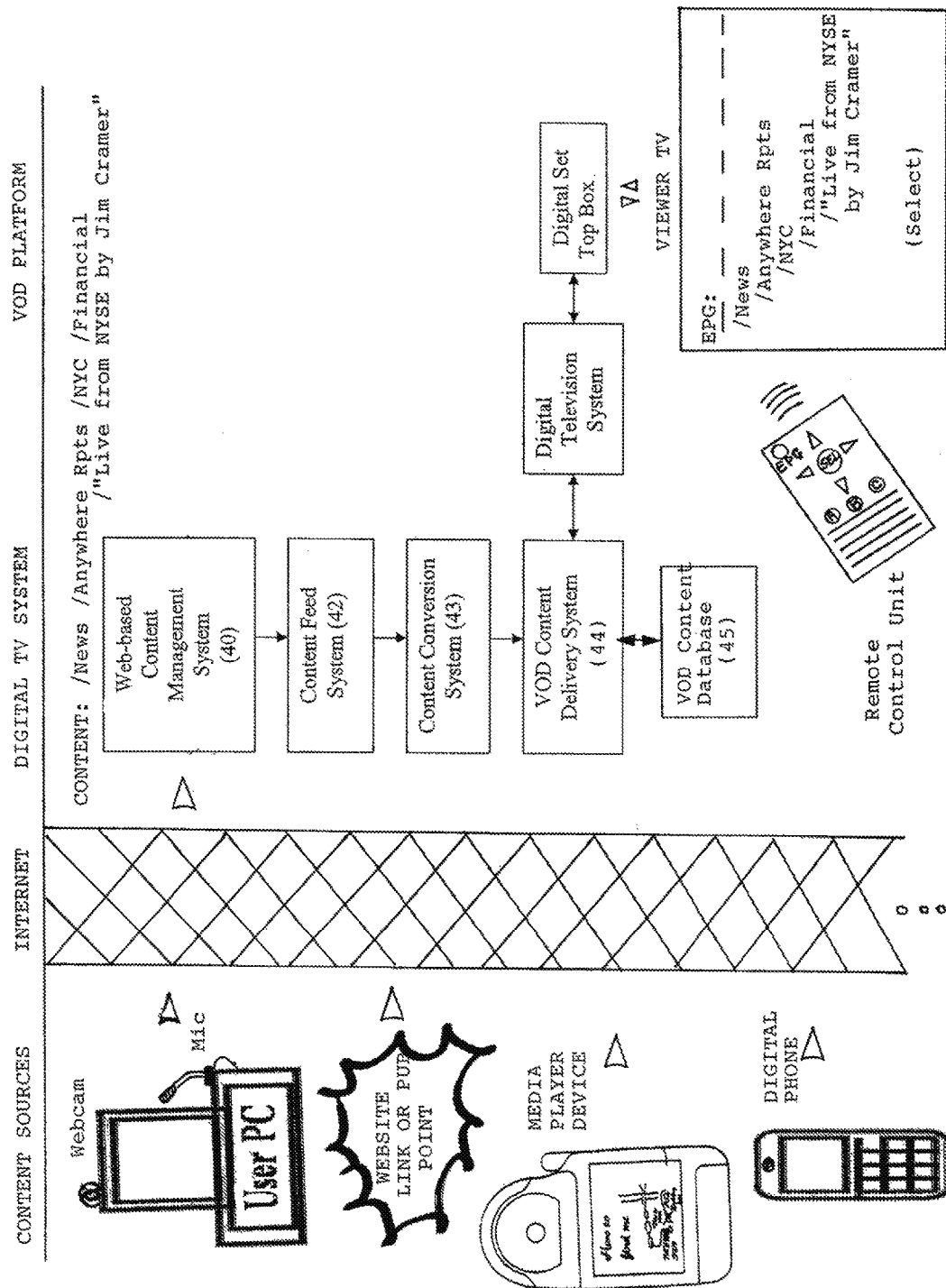


Figure 3: VOD Content Delivery System, Overall Architecture for IPTV System

FIG. 4



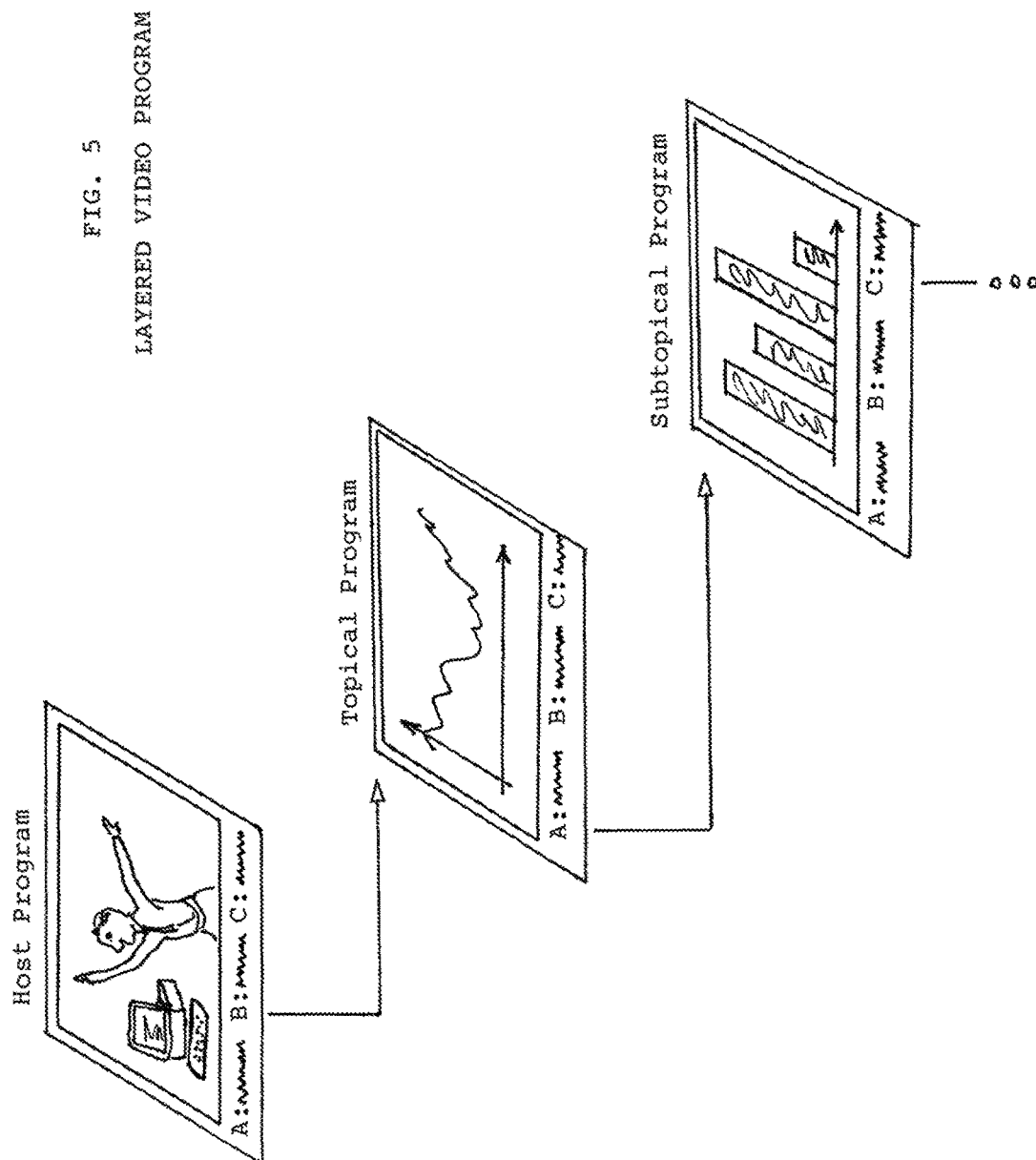




FIG. 6

601


EPG:  
/News  
/Anywhere Rpts  
/NYC  
/Financial  
--->/"Live from

FIND TITLE

PRESS KEY TO "STORE BOOKMARKS"



602

BOOKMARK USER:  
Enter PIN:  


ENTER PIN NUMBER



603

BOOKMARK OPTIONS:  
A. Bookmark it now  
B. Send TV friend  
C. Related programs  
D. Biblio info

SELECT "A" TO BOOKMARK IT NOW



604

STORED BOOKMARKS:  
/News/Anywhere/NYC/...  
/Docum/PBS/Nova/...  
/Host/Cramer,Jim/...  
A: B: C: D:

LAST BOOKMARK AT TOP OF LIST  
VIEWER CAN MANAGE LIST

FIG. 7

From Step 603, Option "B"

701

SEND TV FRIEND:

- A. Select fr Directory
- B. Select fr Contact List
- C. Select Group
- D. Send to email addr

A: 702 - Select fr Directory

Enter ltrd  
Last Name 

P	E	R	E	R					

PERELLA, UserA  
PERETTI, UserA, UserB  
PEREZ, UserA, UserB,

A: Send B: Add List &amp; Send

HIGHLIGHT FRIEND NAME, USER CAN  
SEND or ADD TO LIST & SEND

B: 703 - Select fr Contact List

VIEWER CONTACT LIST:

ALGERNON, LUserA

PEREZ, MUserA, UserB

ZENO, AUserA

A: Send B: Delete C: Add to Groups

HIGHLIGHT FRIEND NAME, USER CAN  
SEND

C: 704 - Select Group

VIEWER GROUPS: 001

001: FINANCE -

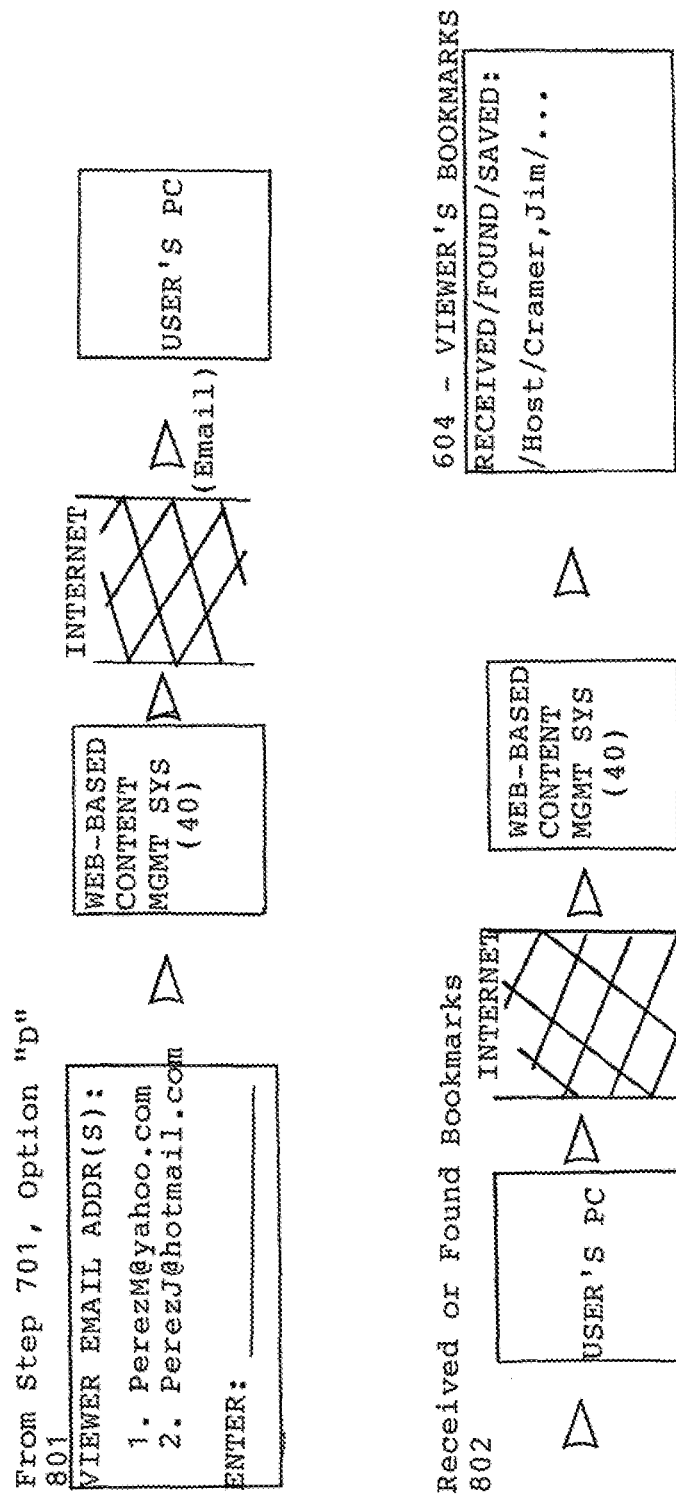
ALGERNON, LUserA  
PEREZ, MUserB

002: SCIENCE -

A: Send B: Delete

ENTER GROUP NUMBER, USER CAN  
SEND, or HIGHLIGHT USER & SEND

FIG. 8



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# SYSTEM FOR ADDRESSING ON-DEMAND TV PROGRAM CONTENT ON TV SERVICES PLATFORM OF A DIGITAL TV SERVICES PROVIDER

## CROSS-REFERENCE TO RELATED APPLICATIONS

This U.S. patent application is a continuation application and claims the benefit of copending U.S. patent application Ser. No. 14/827,090, filed on Aug. 14, 2015, of the same inventor and entitled "METHOD FOR ADDRESSING ON-DEMAND TV PROGRAM CONTENT ON TV SERVICES PLATFORM OF A DIGITAL TV SERVICES PROVIDER", which is a continuation application of U.S. patent application Ser. No. 12/632,745, filed on Dec. 7, 2009, of the same inventor and entitled "METHOD OF ADDRESSING ON-DEMAND TV PROGRAM CONTENT ON TV SERVICES PLATFORM OF A DIGITAL TV SERVICES PROVIDER", and which issued as U.S. Pat. No. 9,113,228 on Aug. 18, 2015, which was a divisional application of U.S. patent application Ser. No. 11/685,188, filed on Mar. 12, 2007, of the same inventor, entitled "METHOD FOR CONVERTING, NAVIGATING AND DISPLAYING VIDEO CONTENT UPLOADED FROM THE INTERNET TO A DIGITAL TV VIDEO-ON-DEMAND PLATFORM" and which issued as U.S. Pat. No. 7,631,336 on Dec. 8, 2009, which was a continuation-in-part application of U.S. patent application Ser. No. 10/909,192, filed on Jul. 30, 2004, of the same inventor, entitled "SYSTEM AND METHOD FOR MANAGING, CONVERTING AND DISPLAYING VIDEO CONTENT ON A VIDEO-ON-DEMAND PLATFORM, INCLUDING ADS USED FOR DRILL-DOWN NAVIGATION AND CONSUMER-GENERATED CLASSIFIED ADS", which issued as U.S. Pat. No. 7,590,997 on Sep. 15, 2009, each of which is hereby incorporated by reference as if fully set forth herein.

## TECHNICAL FIELD

This invention generally relates to the provision of video content to viewers through digital TV infrastructure, and more particularly, to converting, navigating and displaying video content uploaded from the Internet on a digital TV video-on-demand platform.

## BACKGROUND OF INVENTION

Cable television (CATV) systems are used to deliver television services to a vast majority of TV-viewing homes in the U.S. and other technologically advanced countries. The typical CATV system has a cable service provider head end equipped with video servers to transmit CATV program signals through distribution cable lines to local nodes and from there to TV subscriber homes. Within the subscriber homes, the CATV input TV line is connected to one or more customer-premises TVs which are coupled to external set-top boxes for channel tuning or are equipped with internal cable channel tuners. CATV service providers employ the spacious 1 GHz bandwidth of the typical cable (RG-6) line to carry tens of analog TV channels in the portion of the cable bandwidth allocated to analog TV signals. With digital multiplexing methods such as QAM, hundreds of digital TV signals can be carried simultaneously in the portion of the cable bandwidth allocated to digital TV signals. Cable TV service providers have also allocated portions of the cable

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bandwidth for user (return) data, broadband data connection, and voice-over-IP (VoIP) digital telephone service.

Cable TV service providers generally offer subscribers to subscribe to any of several tiers of bundled TV services on a scale with increasing rates in accordance with signal quality, TV program offerings, and types of interactive services. Digital TV services are offered through advanced digital set-top boxes that are individually addressable from the CATV head end, and also allow subscribers various interactive functions with the CATV head end via inputs to the set-top box via the remote control unit for transmission on the return data path to the CATV head end.

A recent type of interactive television service offered on digital TV systems is referred to generally as a "video-on-demand" (VOD) system, wherein a viewer can navigate through a program guide via the remote control unit and send a request via the set-top box for a desired video program to be addressed from the head-end to the subscriber's set-top box for display on the TV. Different types of VOD programs are typically bundled as a package and offered on different VOD "channels". For example, a VOD "channel" can offer on-demand movies and videos, replay sports events, infomercials, advertisements, music videos, short-subjects, and even individual TV "pages". VOD-based interactive television services generally allow a viewer to use the remote control to cursor through an on-screen menu and select from a variety of titles for stored video programs for individual viewing on demand. Advanced remote control units include button controls with VCR-like functions that enable the viewer to start, stop, pause, rewind, or replay a selected video program or segment. In the future, VOD-based interactive television services may be integrated with or delivered with other advanced interactive television services, such as webpage browsing, e-mail, television purchase ("t-commerce") transactions, and multimedia delivery.

Digital cable TV is currently the most prevalent system for offering digital TV services to home TV subscribers. However, other types of digital carriers offering broadband connections to subscriber homes have entered into competition with cable TV providers by offering digital TV services over their broadband connections. Examples of other broadband connections include DSL telephone lines, local area broadband networks, and wireless broadband networks. Digital television services offered on such broadband connections employ the TCP/IP data transport protocol and are referred to as Internet Protocol Television (IPTV). Instead of multi-casting all TV program signals into a cable line, the typical IPTV system will respond to a subscriber's request for a particular TV channel or video program by transmitting the video content individually to the subscriber's individually addressable, digital set top box at high speeds. IPTV and digital cable TV both transmit digital video in packetized data streams within closed, proprietary broadband systems; however, IPTV uses the Internet Protocol (IP) to structure, route and deliver the digital video packets within an IPTV system.

With the increasing interactive functionality and customer reach of interactive television services, advertisers and content providers are finding it increasingly attractive to employ on-demand advertising, on-demand program content, and on-demand TV transactions for home viewers. VOD content delivery platforms are being designed to seamlessly and conveniently deliver a wide range of types of advertising, video content, and transaction services on demand to home viewers. VOD content offerings are expected to increase dramatically from a few "channels" with a few score or

hundred “titles” listed on each today to scores or hundreds of channels with thousands if not millions of titles on each in the foreseeable future. The VOD platform thus offers a gateway for greatly expanding TV viewing from a relatively small number of studio-produced program channels to a large number of new commercial publishers and ultimately a vast number of self-publishers or so-called “citizen” content publishers. It is deemed desirable to find a way for such vast numbers of content publishers to transmit their programs to the home TV, and to enable home TV viewers to find something of interest for viewing among the vast numbers of new programs.

### SUMMARY OF THE INVENTION

In accordance with the present invention, a method for converting, navigating and displaying video content via a video-on-demand (VOD) platform of a digital TV service provider comprises:

- (a) uploading video content in a digital video format via an online network to a Web-based content management server of the VOD platform of the digital TV service provider, along with a title and a hierarchical addressing tag of hierarchically-arranged categories and subcategories for categorizing the title for the video content;
- (b) converting the content uploaded to the Web-based content management server into a standard TV digital format and storing a “local instance” thereof at a video ID (VID) address in a video content database of the VOD platform, wherein the VID address is linked to the metadata title for the video content;
- (c) listing the title of the video content in an electronic program guide of the VOD platform following the same hierarchically-arranged categories and subcategories as the hierarchical addressing tag of the video content;
- (d) providing a TV subscriber, having a TV-connected set-top box addressable by the digital TV service provider, with access to the electronic program guide for navigating through the hierarchically-arranged categories and subcategories therein in order to find the title of the video content; and
- (e) upon the subscriber selecting, via a remote control unit in communication with the set-top box, the title of the video content from the hierarchically-arranged categories and subcategories of the electronic program guide, then transmitting a return request for the selected title to the VOD platform for retrieving the video content stored at the linked VID address in the video content database of the VOD platform, and transmitting the video content to the subscriber’s set-top box for display on the subscriber’s TV.

By the method of the present invention, video content can be published for viewing on home TV with any digital TV service provider by uploading from any node or publishing site on the Internet to the provider’s Web-based content management server. The title of the program becomes automatically listed in the electronic program guide (EPG) following the same hierarchical categorization addressing indicated by the publisher of the content. Typically, the publisher will select the categories and subcategories for categorizing the title of the video content from a standard categorization hierarchy used by the digital television service provider for listing titles to be offered on its VOD platform. With this method, vast numbers of content publishers anywhere on the Internet can upload their programs

to digital television service providers for viewing on the home TV, and home TV viewers can readily find something of interest for viewing among the vast numbers of new programs by navigating through the hierarchical addressing scheme of the provider’s EPG.

In particular, the invention method provides a convenient and substantially automatic vehicle for bringing large numbers of new blogging and pod casting-like programs to TV viewing. Such a blogging or podcasting-like program is typically presented in the video content by a “host” or “celebrity” who has been identified, or can be voted on by viewers, as a popular “Host”. The Host acts as a filter, reviewer, rater, and/or analyst to bring information of value to viewers from the plethora of content populating the viewing landscape. The Host can also serve to link the viewer to other Host programs or other VOD-listed programs, for example, by on-screen directing of the viewer to a menu of options selectable by corresponding option keys on the remote control unit. As an added feature, the EPG can be configured to enable a viewer to store bookmarks for desired VOD-listed TV programs for viewing again or with friends. The viewer’s bookmarks can also be shared with other subscribers via an on-screen Contact List maintained for each viewer, and/or shared with others online by the provider enabling transmission of the bookmark data from the VOD platform to the viewer’s email address or other online address.

The capability for Internet uploading and automatic listing in any VOD EPG opens VOD programming to a greatly expanded field of non-studio TV program publishers. The digital TV service provider can charge program placement fees that are paid by the publisher, advertiser, and/or sponsor. With future expansion of VOD “channel” capacity, the system can be opened to “citizen” publishers and paid for by program advertisers or sponsors and/or by viewer “Premium (VOD) Services” fees.

The foregoing and other objects, features and advantages of the invention are described in further detail below in conjunction with the accompanying drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1A is a diagram of an overall architecture for a VOD Content Delivery System in accordance with the present invention, FIG. 1B shows an example of templated Drill-Down Ad navigation, and FIG. 1C shows an example of the templated ad display model.

FIG. 2A is a process flow diagram of the overall architecture of a Classified Ad application for the VOD Content Delivery System, FIG. 2B illustrates a Content Management Website for the Classified Ad application, FIG. 2C illustrates a Content Screening Component of the system, and FIG. 2D illustrates a Content Feed and Conversion Components of the system.

FIG. 3 is a diagram of a VOD Content Delivery System adapted to Internet Protocol TV (IPTV) system.

FIG. 4 is a diagram illustrating a process flow for enabling content publishers on the Internet to upload video content to digital television service providers for viewing on the home TV.

FIG. 5 is a diagram illustrating an example of a blogging or podcasting-like program presented by a “Host” with layered topics and links to other programs.

FIG. 6 is a diagram illustrating the logic flow for using an EPG to enable a viewer to store TV bookmarks for desired VOD-listed TV programs.

FIG. 7 is a diagram illustrating an example of sharing TV bookmarks with other TV subscribers via an on-screen Contact List maintained for the viewer.

FIG. 8 is a diagram illustrating an example of sharing TV bookmarks with others on the Internet by transmission of bookmark data to the viewer's email address.

#### DETAILED DESCRIPTION OF INVENTION

The following description describes one preferred embodiment for implementation of the invention in which the digital television service provider is one employing cable TV infrastructure. However, it is to be understood that the principles of the invention are equally applicable to other types of digital television service providers offering digital TV services over other broadband connections such as DSL telephone lines, local area broadband networks, and wireless broadband networks. Similarly, certain examples of VOD applications are described herein, e.g., advertisements that are navigated in "drill-down" fashion, and the uploading of consumer-generated classified ads to be viewed as TV classified ads. However, many other types of video content may be used in programming with this system.

Referring to FIG. 1A, an overall system architecture for a VOD content delivery system includes a VOD Application Server 10 located at a Cable Head End. The VOD Application Server 10 manages a Database 11 of templates and video content segments from Video Server 12 for generating templated VOD content. The VOD content is generated in response to a viewer request signal transmitted from the Digital Set Top Box 21 of a viewer's TV equipment through the Digital Cable Television System 13 to the VOD Application Server 10 at the Cable Head End. The VOD Application Server 10 may be of the type which enables any compatibly-developed VOD applications to be loaded on and operated on the server. An example of such a VOD Application Server is the Navic N-Band™ server, offered by Navic Systems, Inc., d/b/a Navic Networks, of Needham, Mass. This is an integrated system which provides an application development platform for third party application developers to develop new VOD service applications, viewer interfaces, and ancillary interactive services for deployment on VOD channels of CATV operators in cable service areas throughout the U.S. A detailed description of the Navic N-Band system is contained in U.S. Patent Application 2002/066,106, filed on May 30, 2002, which is incorporated herein by reference.

Templates for displaying VOD content are created at an Application Data Center 30 and stored in the Database 11 for use by the operative VOD application. The templates may be designed, for example, to present video ad content displays in a logo frame, or to provide navigation buttons and viewer selection options in a frame around currently displayed video content. In the preferred embodiment described in greater detail below, the templates are used to provide navigation aids in a series of progressively more focused ad display types. A Video Content Encoder 31 is used to encode raw video feeds into formatted video content segments compatible with the VOD platform and supply them through a Video Content Distribution Network 14 to the Video Server 12.

In operation, the VOD Application Server 10 operates a VOD application for the CATV system, for example, "automobile infomercials on demand". The viewer sends a request for selected VOD content, such as to see an infomercial on a specific model type made by a specific auto manufacturer, by actuating a viewer request signal by a key

press on the viewer's remote control unit transmitting an IR signal to the Set Top Box 21 that is sent on a back channel of the Digital Cable Television System 13 to the VOD Application Server 10 at the Cable Head End. In response to the signal, the VOD Application Server 10 determines the VOD content being requested and retrieves the infomercial ad display template from the Template Database 11 and video content segment from the Video Server 12, in order to generate the corresponding templated VOD content. In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server 10 retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a "drill down navigation" method to find specific end content of interest.

Referring to FIG. 1B, a preferred embodiment of the templated VOD content delivery system is shown providing a User Interface using Drill-Down Navigation through display ads, such as for automobile infomercials. When the viewer selects a VOD application (channel), such as "Wheels-On-Demand", the viewer's TV displays a Main Menu with buttons inviting the viewer to "Select Category". The viewer can select an "Auto" category, and the TV then displays an "Auto" menu with buttons inviting the viewer to "Select Make", such as Make A, Make B, etc. When the viewer makes a selection, such as Make A, the viewer's TV displays a further menu that is a Gateway into templated VOD content delivery which enables Drill-Down Navigation by templated display ads. Through the Gateway, the VOD Application leaves the Menu mode and enters the Drill Down Navigation mode for successively displays of hierarchically-ordered video content which allow the viewer to navigate to progressively more focused content. In this example, the highest level of the hierarchy includes categories for Model, Local Dealer, Sales Events, and/or Inventory. When the viewer selects a category such as "Model" from the Gateway, for example, the VOD Application creates a templated ad display showing video content generic to all models by that automaker framed in a frame which has links (buttons or choices) for a list of the specific models made by that automaker. When the viewer selects the link to a specific model, "Model A" for example, the VOD Application creates a templated ad display showing video content for Model A, and the viewer can then choose to run a long-form infomercial of the Model A video. Alternatively, the Drill-Down Navigation can continue with further levels of specificity, such as "Custom Packages", "Options", "Colors/Stylings", etc. Similarly, the selection of the "Local Dealer" category from the Gateway can bring up a templated ad for local dealers with links to specific local dealers in the viewer's cable service area, and a click on a specific "Dealer A" can bring up a templated ad for Dealer A with further links to more specific content pertaining to Dealer A, such as "Current Sales Promotions", etc.

In this manner, the templated VOD content delivery system allows the viewer to navigate to specific content of high interest to the viewer using the Drill-Down ads as a navigation tool, while at the same time having a unique visual experience of moving through a series of ads mirroring the viewer's path to the subject of interest. The templated VOD ads are generated dynamically by searching the Content/Template database with each request by a viewer,

enabling the system to display updated navigation choices and content simply by updating the database with updated links and video content. For example, if the Auto Maker changes the Model types of autos currently available, or if Local Dealer A changes its current sales promotions for autos currently available, that advertiser's ads can be updated with new, template frame navigation links and content, instead of entirely new ads or screen displays having to be shot, produced, contracted, delivered, and programmed with the cable TV company. Many other types of layered or in depth ads, subjects, and interactive TV applications can be enabled with the use of the Drill-Down Navigation method. The selections or preferences exhibited by viewer navigation paths through the Drill-Down Navigation can also be tracked, profiled, and/or targeted as feedback data to advertisers for fine-tuning Drill-Down Navigation designs.

In FIG. 1C, an example illustrates how a templated VOD display is generated in layers. A Background screen provides a basic color, logo, or graphical theme to the display. A selected Template (display frame) appropriate to the navigation level the intended display resides on is layered on the Background. The Template typically has a frame in which defined areas are reserved for text, display image(s), and navigation links (buttons). Finally, the desired content constituted by associated Text, Image & Buttons is retrieved from the database and layered on the Template. The resulting screen display shows the combined background logo or theme, navigation frame, and text, video images, and buttons.

Referring again to FIG. 1A, a Tracking System 15 of conventional type can be installed at the Cable Head End to aggregate non-personal data on what channels and programs viewers watch. For the Drill Down Navigation method, the Tracking System 15 can include tracking of the navigation paths viewers use to find subjects of interest in a VOD Application. The aggregation of viewer navigation data can indicate what subjects are most popular, whether some subjects are of greater interest to viewers at certain times of day, of certain demographics, or in relation to certain products or services. The VOD Application Server 10 can export the aggregated viewer navigation data to an external Profiling System 16, such as a non-biased or unrelated firm applying profile analysis methods. The results of the Profiling System 16 can be communicated to a Targeting System 17, such as a template design firm or content production company, to fine-tune the presentation of the templated VOD content consistent with viewer preferences or interests. The feedback from the Targeting System can be supplied as feedback to the VOD Application Server to modify the Content/Template Database 11.

Another application for the templated VOD content delivery system can be developed to support video advertisements which link national to local market ad campaigns in "drill-down" fashion. Advertisers, both national and local, can pay for placement of their video advertisements on the system. When the VOD Application is run, the national ads are displayed as a Gateway to linking to the local market ads. In this manner, national ads can be used to transition viewers from general interest in a product to finding specific information about the product available locally.

The templated VOD content delivery system can also support "traffic building" videos, including music videos, that may not generate direct revenue. Once a video is encoded and registered into the system, the management and distribution of the video is conducted through software systems and automated controls. The User Interface pro-

vides the user with the ability to navigate and find desired video content. Selection of a category presents the user with a list of video titles available for playback. Categories and title lists can be generated using real-time database queries, allowing for database-driven management of content within the User Interface. The User Interface can also support a search interface which allows the user to search the video content database to generate a list of video titles with specific characteristics.

As another aspect of the present invention, a VOD content delivery system may be adapted to offer consumer-generated classified ads on TV. The VOD content delivery system is provided with a Content Management frontend to receive consumer input and convert it to video display ads maintained in the system database. Referring to FIG. 2A, a system for managing, converting and displaying individual consumer-generated ads on a VOD content delivery system has a Web-based Content Management System 40 for enabling an individual user to upload content from their computer via a web browser to display a consumer-generated video ad on TV. The uploaded content includes meta data for classifying the video ad by title and topical area(s). A Content Screening System 41 is used for screening the content input by the individual user, such as by performing automatic searching for objectionable text, audio, video and/or images and rejecting the content if found objectionable.

A Content Feed System 42 is used to automatically transfer consumer-generated content screened through the Content Screening System 41 to a Content Conversion System 43. This system automatically converts the consumer-generated content supplied by the Content Feed System 42 into video display format compatible with the VOD content delivery system. The converted video ad is indexed by title and classified topical areas according to the meta data supplied by the user, in accordance with the indexing system maintained by the Content Management System. The VOD Content Delivery System 44 operates a Classified Ads VOD Application in which menus for finding classified ads are navigated by viewers, and specific classified ads are delivered through the Digital Cable Television System for display as video ads on the viewer's TV equipment in response to viewer request input by remote control to the Digital Set Top Box 21, as described previously with respect to the operation of the general VOD platform.

Referring to FIG. 2B, the Web-based Content Management System 40 includes a plurality of functional components to allow consumers to create and manage their own classified ads as interactive television content, as well as pay for the distribution of their content within the digital cable television system. A Classified Management Application 50 is used to receive consumer input content, have it screened (by the Content Screening System 41, not shown), and store it in the Classified Metadata, Image and Video Database 51. Consumer payment for running video ads is handled by the Transaction Processing Component 53. Also included in the Content Management System is an Account Management Component 55 and Account & Permissions Database 56 for management of user accounts for use of the web-based TV Classified Ads system. A Bulletin Board Ads application may be operated in parallel with the TV Classified Ads application. A Bulletin Board Management Application 54 and Database 57 enable the creation and management of consumer-generated content relating to public announcements and other items of general interest for groups, organizations or topics. The preferred VOD Content Delivery System uses templated VOD content, and a Template

Library **58** is used to store templates for both the Classified Ads and Bulletin Board Ads applications.

The Account Management Component controls the access by persons to the web-based Content Management System. The Account Management Component identifies persons accessing the system for the first time and allows these persons to register and create an account by providing an account name, password, credit card information and other information required for the payment of fees. The Account Management Component controls the access by registered users to their accounts and manages the privileges and security associated to all accounts. Persons may create accounts for the creation and management of Classified Ads. Accounts capable of accessing the Bulletin Board Management Application may also be assigned by a system administrator in the Account Management Component. Any account capable of accessing the Bulletin Board application can then create and manage bulletin board ads for the assigned bulletin boards.

The Classified Content Management System enables users to upload text, audio, video, and/or image files for classified ads in industry-standard file formats and have it converted into video display ads compatible with the VOD Content Delivery System. Classified ads are searched on the viewer's TV equipment by menus and lists indexed by title and topical areas corresponding to the metadata associated with the classified ads content. Selection of a listed item results in the display of a TV display ad containing uploaded text, images, video and/or audio. Users pay listing fees to the operator of the system for maintaining and displaying the classified ads on the digital cable television system.

Significant features of the Classified Ads Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) uploading digital images of the item to the Content Management System; (c) uploading digital video of the item to the Content Management System; (d) uploading digital audio regarding the item to the Content Management System; (e) automated size and resolution processing of digital images uploaded to the system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided content; (j) ability to save classified content in persistent memory or storage for subsequent modification; (k) ability to mark classified content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when a classified content item is to become accessible by users of the interactive television system and the data and time when a classified content item is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that a specific content item is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created classified content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific consumer-generated content by users of the interactive television system; and (p) ability to calculate fees for classified content and submit payment of the fees using the Transaction Processing system.

As noted in (i) above, the Classified Content Management System allows the user to view the content they have

composed using the templates. The templates are designed specifically for use on interactive television systems and the user is able to view on the web-interface their content as composed for presentation on television. As noted in (j) above, the Classified Content Management System allows the persistent storage of classified content; although the user is composing interactive television pages using a template system, the content is persistently stored as individual elements to simplify changes by the user and to allow the conversion of the content to different formats as required by different interactive television systems.

The Bulletin Board Content Management System provides the users of the web-based Content Management System with content creation and content management tools for the creation and maintenance of consumer-generated content related to announcements and other informational items of general interest. Bulletin Board content is displayed on the interactive television system as dedicated interactive television screens (bulletin boards), where approved groups, organizations or topics are each assigned a bulletin board for the display of their information. Bulletin Board content is displayed as list items organized within a bulletin board; selection of a list item results in the display of an interactive television screen containing or providing access to the descriptive data, text, images, video and audio regarding the item.

An alternative implementation of a Bulletin Board can display the content as scrolling text, where the user scrolls through the text, or the text scrolls automatically. Bulletin Board accounts will pay fees determined by the operator of the system for the distribution of the bulletin board content on the interactive television system for display on the digital cable television system. Significant features of the Bulletin Board Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) upload digital images to the content management; (c) upload digital video to the content management system; (d) upload digital audio to the content management system; (e) automated size and resolution processing of digital images uploaded to the system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided bulletin board content; (j) ability to save bulletin board content in persistent memory or storage for subsequent modification; (k) ability to mark bulletin board content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when specific bulletin board content is to become accessible by users of the interactive television system and the data and time when specific bulletin board content is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that specific bulletin board content is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created bulletin board content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific bulletin board content by users of the interactive television system; and (p) ability to calculate fees for bulletin board content and submit payment of the fees in conjunction with the Transaction Processing component.



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The Transaction Processing component allows users of the Classified Content Management System and Bulletin Board Content Management System to determine and pay for any fees resulting from their use of these systems. The Transaction Processing component will allow users to pay for fees using credit cards or other supported payment methods. Significant features of the Transaction Processing component include: (a) ability to maintain business rules for use by the Transaction Processing system to determine fees based on user type and content type; (b) ability to maintain business rules for one or more payment methods for use by the Transaction Processing system in handling the settlement of fees; (c) ability to maintain business rules for user account and payment settlement conditions such as delinquency and lack-of-credit for use by the Transaction Processing system in determining user account privileges and content status; and, (d) ability to process payment of fees in real-time for payment methods that support real-time settlement.

Referring to FIG. 2C, the Content Screening System (41) is comprised of a Text Screening Application 60 which searches for objectionable words or phrases, an Image Screening Application 61 which searches for objectionable graphic images, a Video Screening Application 62 which searches for objectionable images or audio words or phrases in video segments, and an Audio Screening Application 63 which searches for objectionable words or phrases in audio segments. The Content Screening System can be used for both Classified Ads content and Bulletin Board content. Content that has been screened by the Content Screening System is then transferred to the aforementioned Classified Ads Database 51 or the Bulletin Board Content Database 57. The system also has component 64 for Editorial and Customer Service Functions for Classified Ads, and component 65 similarly for Bulletin Board content. These can each include an Email Function to send confirmations of input, reasons for rejection of posting, suggested corrections, further processing, and posting of content to consumers using the system.

Significant features of the Content Screening System include: (a) ability to maintain a library of objectionable or illegal words and phrases for use in the screening of text; (b) ability to perform automated analysis of user content text using the text library as an input and alert system administration personnel to the use of objectionable or illegal content and the use of unknown and suspect words or phrases; (c) ability to maintain a library of objectionable or illegal image elements for use in the screening of images; (d) ability to perform automated image recognition analysis against user content images using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (e) ability to maintain a library of objectionable or illegal image elements for use in the screening of video; (f) ability to perform automated image recognition analysis against user content video using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (g) ability to maintain a library of objectionable or illegal audio elements for use in the screening of audio; (h) ability to perform automated audio analysis against user content audio using the library of audio elements as an input and alert system administration personnel to the use of objectionable or illegal content; and (i) ability to save screened content in persistent memory or storage for subsequent processing. Content Screening is automatically performed with the Content Management System 40 during the user process of submitting and/or creating

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consumer-generated content or may be performed as a process subsequent to the creation of content by the user.

Referring to FIG. 2D, the Content Feed System 42 and the Content Conversion System 43 provide for the transfer of user content from the Content Screening System and conversion to video content format compatible with the VOD Content Delivery System 44. The Content Feed System 42 has a Content Selection/Date Filtering Application which selects consumer-generated content uploaded to the system that is within the dates contracted for posting and display of the content as Classified Ads or on Bulletin Boards. Content within the active date range is transferred to the Active Classified Ads Database 71A or the Active Bulletin Board Database 71B.

The Content Conversion System receives consumer-generated content in industry-standard formats or created in viewable format (HTML) on the web-based input system and converts the content into formats compatible with the VOD Content Delivery System and for display on viewers' televisions. The Content Conversion System 43 has an Image Conversion Application 72 which converts consumer-uploaded image files (in industry-standard formats such as JPEG, GIF, TIFF, BMP, PDF, PPT, etc.) into VOD content format, a Video Conversion Application 73 which converts consumer-uploaded video files into VOD content format, and an Audio Conversion Application 74 which converts consumer-uploaded audio files into VOD content format. Content converted to VOD content format is stored in the Active Converted Classified Ads Database 75A or the Active Converted Bulletin Board Database 75B. The content is subject to a further Production Push Function 76A, 76B and stored in the Production Classified Ads Database 77A or the Production Bulletin Board Database 77B, if any presentation formatting, date stamping, template framing, or other system editing is required by the system.

Significant features of the Content Feed System include: (a) ability to select user content for submission to the Content Conversion System through the testing of appropriate parameters including the date and time information contained in the user content; (b) ability to appropriately package the elements of the user content to permit the efficient transfer of these content elements to the Content Conversion System through an Application Program Interface or other interface; (c) ability to create, maintain and execute a schedule for when the Content Feed System will execute on an automatic basis for the automatic transfer of consumer-generated content to the Content Conversion System; and, (d) ability to execute the functions of the Content Feed System on a manual basis in the presence or absence of a schedule. The Content Feed System may be able to package and distribute content to single or multiple Content Conversion Systems.

Significant features of the Content Conversion system include: (a) ability to receive content packages delivered by the Content Feed System through an Application Program Interface or other interface; (b) ability to process the elements of consumer-generated content into data, text, graphic, video and audio elements that are compatible with the interactive television system and maintain the content presentation created by the user on the web-based Content Management System; (c) ability to save reformatted content in persistent memory or storage for subsequent distribution and use by the interactive television system; and, (d) ability to inform the interactive television system that consumer-generated content is available for distribution and use. The Content Conversion System may be added as a component system of the VOD Content Delivery System, or it may be

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implemented as a wholly separate system that connects to the VOD Content Delivery System through an Application Program Interface or other interface. When implemented as a system that is separate from the VOD Content Delivery System, it is possible to support multiple, different interactive television systems by either (a) incorporating multiple formatting requirements into a single instance of the Content Conversion System or (b) creating multiple Content Conversion Systems, each supporting the formatting requirements for a specific interactive television system. Either implementation allows for a single instance of consumer-generated content that is created and maintained using the web-based Content Management System to be distributed and displayed on multiple, different interactive television systems with different formatting requirements.

The VOD Content Delivery System 44, as described previously, provides for the distribution of screened, converted, properly formatted consumer-generated content to viewers' televisions, typically through the use of digital set-top boxes connected to a digital cable television system capable of supporting real-time two-way data transfer between the set-top box and the Cable Head End. Significant features of the VOD Content Delivery System include: (a) ability to receive properly formatted content from the Content Conversion System; (b) ability to distribute said content over a digital cable television system and display this content on television as an interactive television presentation; (c) ability to receive user commands generated by an infrared remote control device, keyboard or other device; (d) ability to respond to the user commands by displaying appropriate content or executing desired functionality; and, (e) ability to generate and collect data regarding the user sessions and the viewing data regarding consumer-generated content on the interactive television system and make this data accessible to the Tracking System. The VOD Content Delivery System can employ templated VOD content delivery, as described previously with respect to FIG. 1A, enabling use of the Drill Down Navigation method in which viewers can navigate visually through classified ad hierarchical categories to specific titles or content.

The VOD Content Delivery System for the Classified Ads application can also employ the Tracking System 15 for the collection and consolidation of viewing data generated by the interactive television system and the generation of reports against this viewing data. For example, the Tracking System can track the number of viewer requests for viewing that a classified ad received in a given period and calculate billing charges accordingly. The Tracking System can make this information available to users of the Content Management System as well as to system administrative personnel performing general analysis of interactive television services and associated content. Significant features of the Tracking System include: (a) ability to access and process the data generated by the Classified Ads application; (b) ability to form summaries of the viewing data against desired parameters; (c) ability to save data, summaries and reports in persistent memory or storage for subsequent modification or access; (d) ability to make data, summaries and reports accessible by users of the web-based Content Management System, restricting the data accessible by any specific user to data regarding the content created by that user account on the Content Management System; and, (e) ability to make data, summaries and reports accessible by to system administration personnel.

As another aspect of the present invention, implementation of a VOD content delivery system can be made on any digital television system that supports real-time two-way

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data transfer and interactivity between the digital Set Top Box and application servers and VOD servers located at headends or other service points within the television system network. An alternative digital television system of increasing importance in the marketplace is Internet Protocol Television (IPTV). IPTV is a system for delivering video content, both broadcast and Video on Demand, to digital set top boxes and other devices. IPTV and digital cable both transmit digital video in packetized data streams within closed, proprietary broadband systems; however, IPTV uses Internet Protocol (IP) to structure, route and deliver the digital video packets within an IPTV system.

Referring to FIG. 3, an alternative implementation for a VOD content delivery system is illustrated for an IPTV system. The components of the VOD content delivery system listed in the figure are similar to those in FIG. 1A. However, FIG. 3 illustrates the terminology and network architecture of an IPTV system as used for the purposes of this invention. The VOD Application Server 10, Content I Template Database 11, Video Server 12 and Tracking System 15 are located in the IPTV Service Node; the IPTV Service Node is equivalent to the Cable Headend in FIG. 1A. Systems external to the IPTV Service Node such as the Application Data Center 30, Profiling System 16, Targeting System 17 and Video Content Distribution Network 14 connect to their associated VOD Content Delivery System components housed within the IPTV Service Node in manners similar to those used in a digital cable system implementation. IPTV systems can use multiple network technologies within their closed, proprietary broadband network. Core and Access Network 78 are high-bandwidth networks connecting IPTV Service Nodes in order to support the central transport of video streams. The Core and Access Network 78 feed the Customer Access Network 79, which supports the physical network connection into the customer premise and connects to the IPTV Digital Set Top Box 80. The combination of the Core and Access Network 78 and Customer Access Network 79 is the functional equivalent of the Digital Cable Television System 13 in FIG. 1A.

In operation, the VOD Content Delivery System implementation for IPTV is identical to the digital cable implementation. The VOD Application Server 10 operates a VOD application for the IPTV system, for example, "automobile infomercials on demand". The viewer sends a request for selected VOD content, such as to see an infomercial on a specific model type made by a specific auto manufacturer, by actuating a viewer request signal by a key press on the viewer's remote control unit transmitting an IR signal to the IPTV Digital Set Top Box 80 that is sent on as IP-encapsulated message through the IPTV System to the VOD Application Server 10 at the IPTV Service Node. In response to the signal, the VOD Application Server 10 determines the VOD content being requested and retrieves the infomercial ad display template from the Template Database 11 and video content segment from the Video Server 12, in order to generate the corresponding templated VOD content. In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server 10 retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer

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can use the series of linked templated VOD displays as a “drill-down navigation” method to find specific end content of interest.

Similarly, all previously mentioned adaptations of the VOD Content Delivery System implementation for digital cable, such as Classified Ads and Bulletin Boards, are supported identically on IPTV implementations.

Wide Ranging Content Uploadable Via Internet to Digital TV VOD Platform

In the foregoing description, the uploading, management, conversion, and display of content uploaded from the Internet for viewing on a VOD platform was described for an embodiment in which consumer-generated classified ads and other TV-displayable information of interest are uploaded via Internet for conversion and display as video programs on cable TV infrastructure. Even further, the principles of the invention are applicable to a wide range of other content uploadable on the Internet and to other types of digital television service providers such as DSL telephone lines, local area broadband networks, and wireless broadband networks. In the following description, another exemplary embodiment of the present invention is described with respect to uploading wide ranging content via Internet for viewing on the VOD platforms of any type of digital TV system.

Referring to FIG. 4, informational/media content from any Content Source can be uploaded via Internet to a Digital TV System for placement on its Video-on-Demand (VOD) Platform to be viewable as TV programs on Viewers’ TVs by selection from an Electronic Program Guide (EPG) transmitted via the viewer’s Set Top Box for display on the TV. Content is uploaded by an author or publisher to the Web-based Content Management System 40, which processes the content through a Content Feed System 42 and Content Conversion System 43 (from standard digital data formats to TV video format) to the VOD Content Delivery System 44 where it is stored in its associated Video Content Database 45 for retrieval upon viewer request. Uploaded TV programs are offered to viewers by listing them on the EPG, and upon viewer selection via the Set Top Box, are delivered via the Digital TV System infrastructure.

For VOD platforms, an EPG is typically presented to viewers as a program guide displayed on the TV for finding a title of interest associated with that particular VOD channel. The EPG display typically starts with a top level menu offering broad categories of content, e.g., Movies, Documentaries, TV Shows, News, Sports, Community Events, Self-Help, Infomercials, etc. The viewer can cursor through the categories and select a category by moving the cursor to a desired category title, such as “News”, and clicking the “Select” key on the remote control unit. The EPG then brings up the next display of subcategories available in the selected category. For the “News” category, it might display subcategories of “ABC”, “NBC”, “CBS”, “CNN”, “MSNBC”, “Anywhere Reports”, etc. Upon selecting “Anywhere Reports”, the EPG would then display the next level of subcategories down, e.g., “San Francisco”, “Los Angeles”, “Denver”, “Dallas”, “Chicago”, “Boston”, “New York”, “D.C.”, etc. This sequence continues until the viewer selects a program title or exits the EPG.

The EPGs for VOD “channels” thus use program guide displays on the TV which are in a structured hierarchy to allow the viewer to navigate to a program title of interest. Upon selecting the title, a data return associated with that title is sent from the set-top box as a request to the VOD platform for the program associated with that title. The EPG database of the VOD platform maintains an index linking the

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program titles to the addresses in the VOD Content Database 45 where the respective programs are stored. Upon receiving a request of a program title from the set-top box, the VOD Content Delivery System 40 retrieves the corresponding video content from the Database and transmits it on its broadband network to the set-top box that sent the request. Advanced VOD platforms also have VCR or DVR-like functions that enable a viewer to Pause, Play, Rewind, Fast Forward, and Stop a program using the TV remote control unit.

As more and more video content is offered on VOD platforms of digital TV systems, it may be desirable to dynamically adjust the EPG displays of categories, subcategories, and titles for each viewer so as to minimize the number of remote control keypresses needed to navigate to a program title of interest. Such a system is disclosed in a concurrent continuation-in-part U.S. patent application by the same inventor, entitled “Dynamic Adjustment of Electronic Program Guide Displays Based on Viewer Preferences for Minimizing Navigation in VOD Program Selection”, which is incorporated herein by reference.

In the present invention, the EPG hierarchical display structure used in VOD platforms is used as a form of “hierarchical addressing” that uniquely allows viewer navigation to and identifies a program title of interest. This EPG hierarchical addressing scheme can be represented as a string of category term, subcategory term(s), and title that together (as a string delimited by standard character delimiters) uniquely identifying each program offered on the EPG channel. In FIG. 4, for example, the EPG address for a program title on the VOD channel might be represented with a TV (EPG) address as:

TV:/News/Anywhere Reporting/New York/Financial/“Live from NYSE by Jim Cramer”

The uploaded content may be of any digital media type and come from any web-based source. For the TV viewing environment, content accompanied by video images and voice and/or sound is preferred for presentation as entertainment or recreational viewing. Such content can be generated ubiquitously from any PC computer by an author or publisher using a video or webcam for images and a microphone for audio. The media streams may be edited and composed with a multimedia program, such as Microsoft Windows™ Media, Apple Quicktime™, Macromedia Flash™, and others. Similarly, the content may already be composed as a video program and posted on a website as a downloadable video program via a web link or other URL address. For example, websites like YouTube.com, Brightcove.com, and others have become very popular by offering thousands of self-published video programs by nonprofessional authors and publishers for viewing on the Internet. Such video content may also be uploaded from digital media devices such as iPod™ Video sold by Apple Computer Corp. on which it has already been downloaded from a website. It may also be uploaded from digital phone devices such as iPhone™ sold by Apple which has an on-board camera for video and microphone for sound.

The term “Internet” is intended to include any wide area digital network or network of networks connecting a universe of users via a common or industry-standard (TCP/IP) protocol. Users having a connection to the Internet commonly connect browsers on their computing terminal or device to web sites that provide informational content via web servers. The Internet can also be connected to other networks using different data handling protocols through a gateway or system interface, such as wireless gateways using the industry-standard Wireless Application Protocol

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(WAP) to connect Internet websites to wireless data networks. Wireless data networks are being deployed worldwide and allow users anywhere to connect to the Internet via wireless data devices.

The Digital TV System in FIG. 4 can be of any type that supports video-on-demand programming to TV viewers on any suitable type of VOD platform (infrastructure). While it may be a Cable TV system as described previously, it may be any type of digital TV system providing TV services via a high-speed data connection to the viewer's TV. For example, it may be an Internet Protocol TV (IPTV) system of the type connected to home subscribers via phone DSL lines, cable or other high-speed, high-bitrate connections. As previously described with respect to FIG. 3, the IPTV system can support video-on-demand TV services to TV viewers on a scale that cannot be supported by Internet video websites. The Internet is not an infinitely scalable resource, and placing a burden such as high-bitrate, high definition, full-screen video streams in any significant volume can overwhelm the Internet in its present form. IPTV transmits video programs in digital format using the IP protocol, but instead of transmitting over common Internet connections, it transmits over high-speed, high-bitrate connections that are envisioned to be implemented ultimately as all-fiber optical "last mile" connection to the home.

In the present invention, content can be uploaded (manually or by automatic feed) via the Internet to the Web-based Content Management System 40 of a Digital TV System and automatically converted, navigated and selected/displayed on the VOD platform for viewing on home TV. Automatic navigation, selection and display is enabled by adopting the same EPG hierarchical addressing scheme used for the VOD program guide as the addressing metadata identifying content uploaded on the Internet. When an author or publisher connects to the Web-based Content Management System 40, the author or publisher selects the category term, subcategory term(s) and title by which it is desired to find the program title in the TV EPG display hierarchy. Thus, when the above-mentioned example of a video program is uploaded, the hierarchical address for that program would be selected as:

TV:/News/Anywhere Reporting/New York/Financial/"Live from NYSE by Jim Cramer".

This hierarchical addressing metadata is associated with or tagged to the content when uploaded to the Web-based Content Management System 40, and is carried over into the VOD/EPG navigation scheme displayed on the TV. By carrying over the hierarchical address metadata into EPG navigation, the invention allows the content to be automatically listed in the EPG under the common addressing scheme to enable viewers to find any program of interest. The hierarchical addressing string of terms resembles URL addressing commonly used on the Internet. Thus, Internet users can readily become familiar with finding TV programs on the VOD EPG guide due to its resemblance to finding web resources with a URL. Indeed, in the convergence of Internet and TV worlds, a TV EPG hierarchical address may be thought of as a URL for a TV program.

The uploaded content is converted, as previously described, into a standard TV digital format, and a "local instance" thereof is stored at an assigned VID address in the Video Content Database 45 of the VOD platform. The VID address is linked to the metadata title for the video content listed in the EPG. The hierarchical address for the title is automatically carried over into the EPG navigation scheme, and can be found by a viewer cursoring (with the TV remote control) through the EPG following the same hierarchical

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addressing sequence. Upon the subscriber selecting, via a remote control unit in communication with the set-top box, the title of the video content from the hierarchically-arranged categories and subcategories in the EPG, a return request for the selected title is transmitted to the VOD platform for retrieving the video content at the linked VID address in the Video Content Database. The requested video program is then retrieved and transmitted by the VOD Content Delivery System 44 through the digital TV lines to the subscriber's set-top box for display on the subscriber's TV.

By the method of the present invention, the title and hierarchical address assigned by the publisher of the program is automatically carried over into the TV electronic program guide (EPG) following the same hierarchical addressing indicated by the publisher of the content. The publisher selects categories and subcategories for categorizing the title of the video content from the EPG categorization scheme presented by the digital television service provider for the listing of titles on one of its VOD channels. With this method, vast numbers of content publishers anywhere on the Internet can upload their programs with a minimum of conversion and handling steps by the digital television service provider. Home TV viewers can then easily use the EPG hierarchical navigation scheme to find something of interest for viewing.

Digital TV service providers can thus greatly expand the content viewable on the VOD platform from studio-generated programs and canned advertisements to an infinite universe of authors and publishers connected to upload viewable content to their system via the Internet. For example, local content can be created and published by people in a service area's local community—its independent filmmakers, its college students and professors, its civic leaders and others—to provide programming for TV. Providing a vehicle for "citizen content" or "citizen journalism" to be seen on TV is expected to tap into the boundless resourcefulness and creativity of the TV audience itself and enable nonprofessionals to become part of the TV content-creating process. Such citizen content creators and journalists can create content that would otherwise not rise to the level of interest for studios to create programs for them or be overlooked by larger media outlets.

While it may take time for the TV-viewing public to become comfortable with searching for and viewing programs from a plethora of new nonprofessional content, an intermediate stage of demand for nonprofessional content from wide new audiences are the so-called blogging or podcasting programs that have become popular on the Internet or by Internet downloading. Such programs are typically created by an author or publisher that has already achieved popular recognition through word-of-mouth or user rave reviews. The equivalent to the blogger or podcaster on the Internet is the "host" or "celebrity" on the TV. The Host provides a recognized face on TV and is relied upon by his/her audience to provide trusted commentary as a filter, reviewer, rater, and/or analyst of information of value. In the present invention, TV programs created by whole new cadres of non-studio or non-network Hosts and other "self-publishers" can be uploaded via Internet for viewing on TV.

Besides a single video segment, an uploaded program may instead be layered in successive hierarchies of segments that can provide viewers with a "drill-down" experience similar to the "drill-down" video ad immersion experience described previously. For example, in FIG. 5, a hosted video blog show has a Host in a presentation segment (topmost in hierarchy) presenting a topic, such as "Live from NYSE, by

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Jim Cramer". The Host can then direct viewers to click on an on-screen menu of choices to select more detailed topical segments, for example, Key "A" for "S&P 500", Key "B" for "NASDAQ", and Key "C" for "Commodities Markets". Upon clicking on Key "B" for "NASDAQ", the VOD system retrieves the video segment "/Live from NYSE by Jim Cramer !NASDAQ" and displays that video segment to the viewer. The topical segment may have other layers of subtopical segments, for example, Key "A" for "/Feature: Apple Computer", Key "B" for "/Feature: Google", and Key "C" for "/Feature: Microsoft", and so on. As a preferred mode of implementation, the hierarchical video segments are presented and linked in templated VOD displays, as previously described with respect to FIG. 1C, with the menu of options displayed as buttons on the template frame. In the same manner, the Host can also serve to link the viewer to other Host programs or other VOD-listed programs by an on-screen menu of options selectable by keys on the remote control unit.

As an added feature, the above-described VOD EPG with titles categorized in the hierarchical addressing scheme of categories and subcategories can be configured to enable a viewer to store bookmarks for desired VOD-listed TV programs for viewing again or sharing with friends. FIG. 6 is a diagram illustrating the logic flow for using an EPG to enable a viewer to store TV bookmarks for desired VOD-listed TV programs. In Step 601, the viewer selects (highlights) a video content title in the EPG to be bookmarked and enters the key for the on-screen option "Store Bookmarks". In Step 602, a prompt requests the viewer to enter a previously registered Personal Identification Number (PIN) identifying that user, and upon the user entering the PIN number and pressing the "Select" or "Enter" key, the VOD system checks to validate the user's PIN with the registered users for that set top box address.

Upon validating the user, in Step 603, a menu of options is displayed, from which the viewer can select "Bookmark it now". Other options include B: "Send TV Friend, C: "Related Programs", and D: "Bibliographic Information". Option B: "Send TV Friend" is discussed further below. Option C: "Related Programs" is an option where the VOD system can suggest titles related to the one highlighted by the viewer for browsing for further interest. Option D: "Bibliographic Information" allows the viewer to read background information on the highlighted title. Upon bookmarking, in Step 604, the VOD system confirms the bookmark by displaying the latest bookmarked title at the top of the list of bookmarked titles entered by the user. Other options are presented for the viewer to manage the list of bookmarks, such as A: "Play", B: "Delete", C: "Clear All", D: "Send to Net" (described further below).

In order to provide functionality to share video programs with a friend, the VOD system can also enable a viewer to share bookmarks with a friend who is also a TV subscriber in the same service area of the digital TV service provider. FIG. 7 is a diagram illustrating an example of sharing TV bookmarks with other subscribers via an on-screen Contact List maintained for the Viewer. In Step 603 of FIG. 6, the viewer can select option "B" to "Send TV Friend", and the VOD system in Step 701 displays options for selecting the viewer's TV friends to receive bookmarks, including A: Select from directory, B: Select from Contact List returns, and C: Select Group.

If option "A" in Step 701 is selected, the VOD system displays in Step 702 a directory of subscriber names in that service area which can be scrolled through using an on-screen keyboard to input the beginning letters of last names.

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Upon the viewer entering the beginning letters of a last name, the directory jumps to the section listing those names and shows the first names or User ID names for any previously registered "User A", "User B", etc., for the bookmarking service. The viewer can then select the other TV subscriber the bookmark is to be sent to, and then click option A: "Send" or B: "Add to List & Send". In option "B", the highlighted name is automatically added to the viewer's Contact List (see following). If option "B" in Step 701 was selected, the VOD system displays in Step 703 an alphabetical Contact List of subscriber names/users previously entered (or automatically added by sending) by the viewer. The viewer can highlight the friend's name/user, and click A: "Send". Other options include B: "Delete" and C: "Add to Groups". If option "c" in Step 701 was selected, the VOD system displays in Step 704 a listing of Groups (by number) having individual names/users previously entered by the viewer.

As a further TV-controlled functionality to share video programs with a friend, the VOD system can also enable a viewer to share bookmarks with other friends and contacts on the Internet. This requires traversing the boundary between the digital TV service and the Internet. FIG. 8 is a diagram illustrating an example of sharing TV bookmarks with others online by transmission of bookmark data to the viewer's email address. If the viewer selected option "D" in Step 701 of FIG. 7, the VOD system displays a list of previously entered email addresses entered for the subscriber household, and also an input box for a new or changed email address. Upon highlighting or entering the intended email recipient and clicking "Send" in Step 801, the request from the viewer's set top box is returned to the Digital TV System and routed to the Web-based Content Management System 40 or other web-based server with Internet connectivity for sending the TV bookmark(s) to the indicated email address which is received and accessed on the recipient's PC or other email-enabled device.

Going from Internet to the TV, in Step 802, a PC user can share TV bookmarks received by email on the PC with other contacts and friends whose email addresses are maintained in an address book or contact list on that person's email client. The PC user can also send TV bookmarks found in searching a website for program listings offered by the Digital TV System to their own Viewer Bookmarks file(s) or to those of other TV subscribers. The PC user simply logs on via Internet to the Web-based Content Management Server 40 for the Digital TV System and selects an option to send the TV bookmark(s) to the Viewer's Bookmark file(s) 604 for that person's subscriber name/user, or to the name/user of any other TV subscriber.

The capability for Internet uploading and automatic listing in any VOD EPG opens VOD programming in digital TV systems to greatly expanded audiences of non-studio, non-professional video authors and publishers. The new publishers also become new viewers, reviewers, commentators, and celebrities to accelerate the "network effect" of expanded viewing on TV. The digital TV service provider can charge smaller but greatly multiplied VOD program placement fees to the new audiences of non-studio, non-professional video authors and publishers. Programs that rise above the crowd due to popularity may attract advertising and sponsorships placements that provide additional revenues for the digital TV service provider and the publisher. With future expansion of VOD "channel" capacity, the system can be opened to broad masses of "citizen" publishers. Popular "blogs", "themes", "social networks", or "knowledge networks" created on VOD channels may

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attract advertising and sponsorships to the digital TV service provider. The placement fees charged for the broad masses of other programs may be reduced or enhanced by “carve backs” funded by automatic digital ad insertions or “pre-rolls” inserted before the program and paid to the publisher. The digital TV service provider can provide value-added services to publishers justifying program placement fees or revenue-sharing of paid advertising by maintaining “dynamic accounts” for publishers tracking number of views, popularity, length of placement, paid advertising spots, carve back payments, etc. Expanded VOD viewing also can generate additional revenue streams for the digital TV service provider from viewers through gigabyte download fees or by “Premium (VOD) Services” (upper viewer tier) fees.

The extension of TV VOD programming to citizen publishing, and the convergence of Internet searching with sharing of TV program bookmarks, can also stimulate diverse new content publishing sources and supporting hardware and equipment in the converged Internet-TV universe. For example, TV EPGs can be exported to via Internet to Internet-connected digital devices, including digital phones, media players, game consoles, Video iPods™, PDAs, etc., and conversely, TV bookmarks selected from EPGs on the Internet can be imported back into the viewer’s “MyEPG” or “MyVideoLibrary” for their TV through the Web-based Content Management System. This would enable people to freely select, save, bookmark, and share TV programs with friends and contacts between their TV viewing environment and their daily mobile or away-from home environments. Internet-connected DVRs, such as those sold by TiVo, or virtual DVRs offered by the digital TV service provider can also connect Internet searching and bookmark sharing to the viewer’s “MyEPG” or “MyVideoLibrary” for VOD program viewing.

In the above description, a VOD “channel” is a term commonly used for the mechanism by which users access and view VOD content. “Channel” historically refers to linear broadcast channels, and VOD by definition is a non-linear, on-demand experience. When a user accesses a VOD “channel” on a digital television system, they are accessing a digital “virtual channel”, where the tuning of the channel number triggers the digital set top box to load and execute an interactive application that is presented on the television. This application will present the categories, sub-categories and titles of VOD content that is available for viewing. The user navigates through the application using the remote control, traversing the hierarchy used to organize the VOD content. When the user selects a VOD title for playback, the digital VOD content is transmitted from a VOD server to the set top box using a dedicated data stream. The actual mechanisms for transmission vary for different digital television system technologies, but in all cases the stream is unicast to the specific set top box. The set top box receives and decodes the data stream and presents the VOD content on the television. A digital television system can support many VOD “channels”, where each “channel” is an interactive application that offers VOD content that has been grouped together by topic, sponsor, content producer or other attributes. As available bandwidth increases in digital television systems, there will be an increase in quantity of the VOD “channels” available to the user, as content producers migrate from the linear broadcast format to the non-linear on-demand format. Correspondingly, as the processing power of set top boxes increases, combined with greater network bandwidth, the sophistication of the interactive applications supporting VOD “channels” will

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increase, offering enhanced ways for interacting with the content and the producer, as well as offer related content and materials, transactions and other methods for engaging the user more completely with the content.

It is understood that many modifications and variations may be devised given the above description of the principles of the invention. It is intended that all such modifications and variations be considered as within the spirit and scope of this invention, as defined in the following claims.

What is claimed is:

1. An Internet-connected digital device for receiving, via the Internet, video content to be viewed by a subscriber of a video-on-demand system using a hierarchically arranged electronic program guide,

the Internet-connected digital device being configured to obtain and present to the subscriber an electronic program guide as a templated video-on-demand display, which uses at least one of a plurality of different display templates to which the Internet-connected digital device has access, to enable a subscriber using the Internet-connected digital device to navigate in a drill-down manner through titles by category information in order to locate a particular one of the titles whose associated video content is desired for viewing on the Internet-connected digital device using the same category information as was designated by a video content provider in metadata associated with the video content; wherein the templated video-on-demand display has been generated in a plurality of layers, comprising:

(a) a first layer comprising a background screen to provide at least one of a basic color, logo, or graphical theme to display;

(b) a second layer comprising a particular display template from the plurality of different display templates layered on the background screen, wherein the particular display template comprises one or more reserved areas that are reserved for displaying content provided by a different layer of the plurality of layers; and

(c) a third layer comprising reserved area content generated using the received video content, the associated metadata, and the associated plurality of images to be displayed in the one or more reserved areas in the particular display template as at least one of text, an image, a navigation link, and a button,

wherein the navigating through titles in a drill-down manner comprises navigating from a first level of the hierarchical structure of the video-on-demand content menu to a second level of the hierarchical structure to locate the particular one of the titles, and

wherein a first template of the plurality of different display templates is used as the particular display template for the templated display for displaying the first level of the hierarchical structure and wherein a second template of the plurality of different display templates is used as the particular display template for the templated display for displaying the second level of the hierarchical structure,

wherein the received video content was uploaded to a Web-based content management system by a content provider device associated with the video content provider via the Internet in a digital video format, along with associated metadata including title information and category information, and along with an associated plurality of images designated by the video content provider, the associated metadata specifying a respective hierarchical location of a respective title of the video content within the electronic program guide to be

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displayed on the Internet-connected digital device using the respective hierarchically-arranged category information associated with the respective title, wherein at least one of the uploaded associated plurality of images designated by the video content provider is displayed with the associated respective title in the templated video-on-demand display.

2. The Internet-connected digital device of claim 1, wherein the associated plurality of images that are received includes at least one of graphic, video and audio elements.

3. The Internet-connected digital device of claim 1, wherein the plurality of different display templates for display with the electronic program guide are used to locate the particular one of the titles in a drill-down manner from a first level of a hierarchical structure of the electronic program guide to a second level of the hierarchical structure of the electronic program guide, wherein a first of the plurality of different display templates is used for displaying the first level of the electronic program guide and wherein a second of the plurality of different display templates is used for displaying the second level of the electronic program guide.

4. The Internet-connected digital device of claim 1, wherein at least a first display template of the plurality of different display templates is associated with at least the video content provider.

5. The Internet-connected digital device of claim 1, wherein the associated metadata includes descriptive data about the video content.

6. The Internet-connected digital device of claim 1, wherein the one or more category terms associated with the first video-on-demand program content correspond to one or more topics that pertain to video-on-demand program content from more than one content provider.

7. The Internet-connected digital device of claim 1, wherein the one or more category terms associated with the first video-on-demand program content correspond to one or more content providers and wherein the hierarchically arranged electronic program guide is organized according to the content provider.

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8. The Internet-connected digital device of claim 1, wherein the Internet-connected digital device is a set top box.

9. The Internet-connected digital device of claim 1, wherein the Internet-connected digital device uses the Internet Protocol.

10. The Internet-connected digital device of claim 1, wherein the Internet-connected digital device is configured to be used with an Internet Protocol TV (IPTV) system.

11. The Internet-connected digital device of claim 1, wherein the Internet-connected digital device is a digital phone.

12. The Internet-connected digital device of claim 1, wherein the Internet-connected digital device is a personal digital assistant (PDA).

13. The Internet-connected digital device of claim 1, wherein the Internet-connected digital device is a media player.

14. The Internet-connected digital device of claim 1, wherein the Internet-connected digital device is a game console.

15. The Internet-connected digital device of claim 1, wherein the Internet-connected digital device is further configured to receive a selection from the subscriber to bookmark a selected title and to store an electronic guide location address for the video-on-demand program associated with the selected title as an electronic bookmark for later viewing.

16. The Internet-connected digital device of claim 15, wherein the Internet-connected digital device is further configured to send the electronic bookmark from the Internet-connected digital device to a second Internet-connected digital device.

17. The Internet-connected digital device of claim 15, wherein the Internet-connected digital device is further configured to transmit an email including the stored electronic bookmark to an email address of a user on the Internet.

\* \* \* \* \*



US009973825B2

(12) **United States Patent**  
**Perez**

(10) **Patent No.:** **US 9,973,825 B2**  
(45) **Date of Patent:** **\*May 15, 2018**

(54) **DYNAMIC ADJUSTMENT OF ELECTRONIC PROGRAM GUIDE DISPLAYS BASED ON VIEWER PREFERENCES FOR MINIMIZING NAVIGATION IN VOD PROGRAM SELECTION**

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,706,121 A 11/1987 Young  
4,751,578 A 6/1988 Reiter et al.  
(Continued)

FOREIGN PATENT DOCUMENTS

EP 1 164 796 A1 12/2001  
EP 1 361 759 A1 11/2003  
(Continued)

OTHER PUBLICATIONS

Notice of Entry of Judgment Without Opinion for Case No. 2016-1082 of the United States Court of Appeals for the Federal Circuit dated Sep. 26, 2016.

(Continued)

*Primary Examiner* — Michael R Telan

(74) *Attorney, Agent, or Firm* — Amster, Rothstein & Ebenstein LLP

(57) **ABSTRACT**

Items of video content offered for viewing on a video-on-demand (VOD) platform of a digital TV service provider are each assigned a respective title and hierarchical address corresponding to hierarchically-arranged categories and subcategories within which the title for the video content is to be categorized. The title is listed in a location of an electronic program guide (EPG) using the same categories and subcategories as its hierarchical address. Any TV subscriber can access the EPG and navigate through its categories and subcategories to find a title for viewing on the TV. The EPG dynamically adjust its display listings of each level of categories, subcategories, and titles in order to minimize the number of remote control keypresses needed for a viewer to navigate to a title of interest. In one basic form, the EPG display is reordered by listing more frequently visited categories or subcategories first, and other less frequently visited categories or subcategories lower on the listing or out-of-sight on another page of the display.

**18 Claims, 16 Drawing Sheets**

(71) Applicant: **Broadband iTV, Inc.**, Honolulu, HI (US)

(72) Inventor: **Milton Diaz Perez**, Tiburon, CA (US)

(73) Assignee: **Broadband iTV, Inc.**, Honolulu, HI (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days. days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **15/441,956**

(22) Filed: **Feb. 24, 2017**

(65) **Prior Publication Data**

US 2017/0171632 A1 Jun. 15, 2017

**Related U.S. Application Data**

(63) Continuation of application No. 11/768,895, filed on Jun. 26, 2007, now Pat. No. 9,584,868.

(51) **Int. Cl.**

**H04N 21/482** (2011.01)

**H04N 21/472** (2011.01)

(Continued)

(52) **U.S. Cl.**

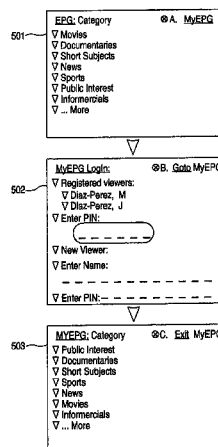
CPC ... **H04N 21/4821** (2013.01); **H04N 21/25891** (2013.01); **H04N 21/44222** (2013.01);

(Continued)

(58) **Field of Classification Search**

None

See application file for complete search history.





- (51) **Int. Cl.**  
*H04N 21/84* (2011.01)  
*H04N 21/61* (2011.01)  
*H04N 21/258* (2011.01)  
*H04N 21/45* (2011.01)  
*H04N 21/442* (2011.01)
- (52) **U.S. Cl.**  
 CPC ... *H04N 21/4532* (2013.01); *H04N 21/47202*  
 (2013.01); *H04N 21/6125* (2013.01); *H04N*  
*21/84* (2013.01)
- (56) **References Cited**  
 U.S. PATENT DOCUMENTS
- |           |    |         |                           |           |    |         |                    |
|-----------|----|---------|---------------------------|-----------|----|---------|--------------------|
| 5,479,268 | A  | 12/1995 | Young et al.              | 6,201,538 | B1 | 3/2001  | Wugofski           |
| 5,485,219 | A  | 1/1996  | Woo                       | 6,205,582 | B1 | 3/2001  | Hoarty             |
| 5,550,735 | A  | 8/1996  | Slade et al.              | 6,208,799 | B1 | 3/2001  | Marsh et al.       |
| 5,559,549 | A  | 9/1996  | Hendricks et al.          | 6,233,736 | B1 | 5/2001  | Wolzien            |
| 5,566,287 | A  | 10/1996 | Delpuch                   | 6,237,146 | B1 | 5/2001  | Richards           |
| 5,589,892 | A  | 12/1996 | Knee et al.               | 6,248,946 | B1 | 6/2001  | Dwek               |
| 5,592,551 | A  | 1/1997  | Lett et al.               | 6,269,275 | B1 | 7/2001  | Slade              |
| 5,594,936 | A  | 1/1997  | Rebec et al.              | 6,289,346 | B1 | 9/2001  | Milewski et al.    |
| 5,616,876 | A  | 4/1997  | Cluts                     | 6,305,016 | B1 | 10/2001 | Marshall et al.    |
| 5,648,824 | A  | 7/1997  | Dunn et al.               | 6,317,885 | B1 | 11/2001 | Fries              |
| 5,670,730 | A  | 9/1997  | Grewé et al.              | 6,332,175 | B1 | 12/2001 | Birrell et al.     |
| 5,686,954 | A  | 11/1997 | Yoshinobu et al.          | 6,357,042 | B2 | 3/2002  | Srinivasan         |
| 5,689,799 | A  | 11/1997 | Dougherty et al.          | 6,377,530 | B1 | 4/2002  | Burrows            |
| 5,699,125 | A  | 12/1997 | Rzeszewski et al.         | 6,418,556 | B1 | 7/2002  | Bennington et al.  |
| 5,701,161 | A  | 12/1997 | Williams et al.           | 6,445,398 | B1 | 9/2002  | Gerba et al.       |
| 5,721,827 | A  | 2/1998  | Logan et al.              | 6,446,083 | B1 | 9/2002  | Leight et al.      |
| 5,734,853 | A  | 3/1998  | Hendricks et al.          | 6,476,826 | B1 | 11/2002 | Plotkin et al.     |
| 5,739,451 | A  | 4/1998  | Winsky et al.             | 6,539,548 | B1 | 3/2003  | Hendricks et al.   |
| 5,758,258 | A  | 5/1998  | Shoff et al.              | 6,546,393 | B1 | 4/2003  | Khan               |
| 5,759,101 | A  | 6/1998  | Von Kohorn                | 6,564,380 | B1 | 5/2003  | Murphy             |
| 5,778,181 | A  | 7/1998  | Hidary et al.             | 6,606,746 | B1 | 8/2003  | Zdepski et al.     |
| 5,790,176 | A  | 8/1998  | Craig                     | 6,678,463 | B1 | 1/2004  | Pierre et al.      |
| 5,790,935 | A  | 8/1998  | Payton                    | 6,738,978 | B1 | 5/2004  | Hendricks          |
| 5,798,785 | A  | 8/1998  | Hendricks et al.          | 6,754,904 | B1 | 6/2004  | Cooper et al.      |
| 5,798,921 | A  | 8/1998  | Johnson et al.            | 6,760,721 | B1 | 7/2004  | Chasen et al.      |
| 5,805,763 | A  | 9/1998  | Lawler et al.             | 6,766,100 | B1 | 7/2004  | Komar et al.       |
| 5,812,123 | A  | 9/1998  | Rowe et al.               | 6,772,433 | B1 | 8/2004  | LaJoie et al.      |
| 5,813,014 | A  | 9/1998  | Gustman                   | 6,774,926 | B1 | 8/2004  | Ellis et al.       |
| 5,822,123 | A  | 10/1998 | Davis et al.              | 6,804,825 | B1 | 10/2004 | White et al.       |
| 5,826,102 | A  | 10/1998 | Escobar                   | 6,834,110 | B1 | 12/2004 | Marconcini et al.  |
| 5,832,499 | A  | 11/1998 | Gustman                   | 6,845,396 | B1 | 1/2005  | Kanojia et al.     |
| 5,850,218 | A  | 12/1998 | LaJoie et al.             | 6,898,762 | B2 | 5/2005  | Ellis et al.       |
| 5,859,898 | A  | 1/1999  | Checco                    | 6,910,191 | B2 | 6/2005  | Segerberg et al.   |
| 5,867,821 | A  | 2/1999  | Ballantyne                | 6,928,433 | B2 | 8/2005  | Goodman et al.     |
| 5,884,033 | A  | 3/1999  | Duvall et al.             | 6,931,451 | B1 | 8/2005  | Logan et al.       |
| 5,892,536 | A  | 4/1999  | Logan et al.              | 6,976,229 | B1 | 12/2005 | Balabanovic et al. |
| 5,914,746 | A  | 6/1999  | Matthews                  | 6,985,586 | B2 | 1/2006  | Hill               |
| 5,918,303 | A  | 6/1999  | Yamaura et al.            | 6,990,677 | B1 | 1/2006  | Pietraszak et al.  |
| 5,926,230 | A  | 7/1999  | Nijima et al.             | 7,020,888 | B2 | 3/2006  | Reynolds et al.    |
| 5,931,901 | A  | 8/1999  | Wolfe                     | 7,028,327 | B1 | 4/2006  | Dougherty et al.   |
| 5,956,716 | A  | 9/1999  | Kenner et al.             | 7,047,411 | B1 | 5/2006  | DeMello et al.     |
| 5,969,283 | A  | 10/1999 | Looney et al.             | 7,055,166 | B1 | 5/2006  | Logan et al.       |
| 5,991,801 | A  | 11/1999 | Rebec et al.              | 7,055,169 | B2 | 5/2006  | Delpuch et al.     |
| 6,005,561 | A  | 12/1999 | Hawkins et al.            | 7,058,223 | B2 | 6/2006  | Cox                |
| 6,008,803 | A  | 12/1999 | Rowe et al.               | 7,065,709 | B2 | 6/2006  | Ellis              |
| 6,018,768 | A  | 1/2000  | Ullman et al.             | 7,076,734 | B2 | 7/2006  | Wolff et al.       |
| 6,025,837 | A  | 2/2000  | Matthews et al.           | 7,089,309 | B2 | 8/2006  | Ramaley et al.     |
| 6,029,045 | A  | 2/2000  | Picco et al.              | 7,100,185 | B2 | 8/2006  | Bennington et al.  |
| 6,038,591 | A  | 3/2000  | Wolfe                     | 7,103,905 | B2 | 9/2006  | Novak              |
| 6,049,823 | A  | 4/2000  | Hwang                     | 7,103,906 | B1 | 9/2006  | Katz et al.        |
| 6,062,868 | A  | 5/2000  | Toriumi                   | 7,120,925 | B2 | 10/2006 | D'Souza et al.     |
| 6,088,455 | A  | 7/2000  | Logan et al.              | 7,155,674 | B2 | 12/2006 | Breen et al.       |
| 6,092,080 | A  | 7/2000  | Gustman                   | 7,200,575 | B2 | 4/2007  | Hans et al.        |
| 6,100,883 | A  | 8/2000  | Hoarty                    | 7,213,005 | B2 | 5/2007  | Mourad et al.      |
| 6,118,442 | A  | 9/2000  | Tanigawa                  | 7,222,163 | B1 | 5/2007  | Girouard et al.    |
| 6,118,450 | A  | 9/2000  | Proehl et al.             | 7,225,455 | B2 | 5/2007  | Bennington et al.  |
| 6,128,012 | A  | 10/2000 | Seidensticker, Jr. et al. | 7,243,139 | B2 | 7/2007  | Ullman et al.      |
| 6,148,081 | A  | 11/2000 | Szymanski et al.          | 7,269,854 | B2 | 9/2007  | Simmons et al.     |
| 6,161,142 | A  | 12/2000 | Wolfe                     | 7,277,870 | B2 | 10/2007 | Mourad et al.      |
| 6,163,316 | A  | 12/2000 | Killian                   | 7,305,691 | B2 | 12/2007 | Cristofalo         |
| 6,172,677 | B1 | 1/2001  | Stautner et al.           | 7,308,413 | B1 | 12/2007 | Tota et al.        |
| 6,177,931 | B1 | 1/2001  | Alexander et al.          | 7,337,462 | B2 | 2/2008  | Dudkiewicz et al.  |
|           |    |         |                           | 7,367,043 | B2 | 4/2008  | Dudkiewicz et al.  |
|           |    |         |                           | 7,386,512 | B1 | 6/2008  | Allibhoy et al.    |
|           |    |         |                           | 7,392,532 | B2 | 6/2008  | White et al.       |
|           |    |         |                           | 7,409,437 | B2 | 8/2008  | Ullman et al.      |
|           |    |         |                           | 7,421,729 | B2 | 9/2008  | Zenoni             |
|           |    |         |                           | 7,426,558 | B1 | 9/2008  | Allibhoy et al.    |
|           |    |         |                           | 7,444,402 | B2 | 10/2008 | Rennels            |
|           |    |         |                           | 7,471,834 | B2 | 12/2008 | Sull et al.        |
|           |    |         |                           | 7,490,346 | B2 | 2/2009  | Alao et al.        |
|           |    |         |                           | 7,493,643 | B2 | 2/2009  | Ellis              |
|           |    |         |                           | 7,516,472 | B2 | 4/2009  | Danker et al.      |
|           |    |         |                           | 7,548,565 | B2 | 6/2009  | Sull et al.        |
|           |    |         |                           | 7,590,997 | B2 | 9/2009  | Diaz Perez         |
|           |    |         |                           | 7,594,245 | B2 | 9/2009  | Sezan et al.       |
|           |    |         |                           | 7,596,797 | B1 | 9/2009  | Kapner, III et al. |
|           |    |         |                           | 7,606,883 | B1 | 10/2009 | Allibhoy et al.    |
|           |    |         |                           | 7,624,337 | B2 | 11/2009 | Sull et al.        |

(56)

## References Cited

## U.S. PATENT DOCUMENTS

7,631,336	B2	12/2009	Diaz Perez	9,635,408	B2	4/2017	Akadiri
7,644,429	B2	1/2010	Bayassi et al.	2001/0018771	A1	8/2001	Walker et al.
7,650,621	B2	1/2010	Thomas et al.	2001/0033736	A1	10/2001	Yap
7,690,020	B2	3/2010	Lebar	2001/0049625	A1	12/2001	Mowry
7,698,723	B2	4/2010	Hicks, III et al.	2001/0052132	A1	12/2001	Fryer
7,720,707	B1	5/2010	Mowry	2002/0007485	A1	1/2002	Rodriguez et al.
7,725,740	B2	5/2010	Kudelski et al.	2002/0042921	A1	4/2002	Ellis
7,761,899	B2	7/2010	Buehl et al.	2002/0045960	A1	4/2002	Phillips et al.
7,774,819	B2	8/2010	Perez	2002/0056104	A1	5/2002	Burnhouse et al.
7,801,838	B2	9/2010	Colbath et al.	2002/0057892	A1	5/2002	Mano et al.
7,801,910	B2	9/2010	Houh et al.	2002/0059621	A1	5/2002	Thomas et al.
7,814,519	B2	10/2010	Rao et al.	2002/0066106	A1	5/2002	Kanojia et al.
7,831,512	B2	11/2010	Akadiri	2002/0069218	A1	6/2002	Sull et al.
7,835,920	B2	11/2010	Snyder et al.	2002/0078456	A1	6/2002	Hudson
7,885,963	B2	2/2011	Sanders	2002/0083451	A1	6/2002	Gill et al.
7,900,229	B2	3/2011	Dureau	2002/0087661	A1	7/2002	Matichuk et al.
7,908,626	B2	3/2011	Williamson et al.	2002/0088009	A1	7/2002	Dudkiewicz et al.
7,917,933	B2	3/2011	Thomas et al.	2002/0088010	A1	7/2002	Dudkiewicz et al.
7,921,448	B2	4/2011	Fickle et al.	2002/0092019	A1	7/2002	Marcus
7,925,973	B2	4/2011	Allaire et al.	2002/0104099	A1	8/2002	Novak
7,926,079	B2	4/2011	Lebar	2002/0120925	A1	8/2002	Logan
7,945,929	B2	5/2011	Knudson et al.	2002/0138843	A1	9/2002	Samaan et al.
7,949,722	B1	5/2011	Ullman et al.	2002/0138844	A1	9/2002	Otenasek
7,950,033	B2	5/2011	Pierre et al.	2002/0147975	A1	10/2002	Seo
7,962,414	B1	6/2011	Allibhoy et al.	2002/0152224	A1	10/2002	Roth et al.
7,974,962	B2	7/2011	Krakirian et al.	2002/0152318	A1	10/2002	Menon et al.
7,987,492	B2	7/2011	Liwerant et al.	2002/0163532	A1	11/2002	Thomas et al.
7,996,861	B1	8/2011	Delpuch	2002/0174430	A1	11/2002	Ellis et al.
8,006,263	B2	8/2011	Ellis et al.	2002/0174433	A1	11/2002	Baumgartner et al.
8,010,988	B2	8/2011	Cox	2002/0184634	A1	12/2002	Cooper
8,020,187	B2	9/2011	Cox	2002/0184635	A1	12/2002	Istvan
8,042,132	B2	10/2011	Carney et al.	2002/0194194	A1	12/2002	Fenton et al.
8,051,450	B2	11/2011	Robarts et al.	2002/0199188	A1	12/2002	Sie et al.
8,090,605	B2	1/2012	Tota et al.	2003/0009542	A1	1/2003	Kasal et al.
8,107,786	B2	1/2012	Sardera	2003/0016940	A1	1/2003	Robbins
8,112,776	B2	2/2012	Schein et al.	2003/0018971	A1	1/2003	McKenna
8,122,034	B2	2/2012	Aravamudan et al.	2003/0037010	A1	2/2003	Schmelzer
8,151,290	B1	4/2012	Ujihara	2003/0055893	A1	3/2003	Sato et al.
8,191,098	B2	5/2012	Cooper et al.	2003/0084126	A1	5/2003	Kumar et al.
8,205,237	B2	6/2012	Cox	2003/0084449	A1	5/2003	Chane et al.
8,214,254	B1	7/2012	Mowry	2003/0093790	A1	5/2003	Logan et al.
8,219,446	B1	7/2012	Mowry	2003/0101451	A1	5/2003	Bentolila et al.
8,249,924	B1	8/2012	Mowry	2003/0126605	A1	7/2003	Betz et al.
8,281,339	B1	10/2012	Walker et al.	2003/0149975	A1	8/2003	Eldering et al.
8,315,949	B2	11/2012	Akadiri	2003/0149981	A1	8/2003	Finster et al.
8,332,268	B2	12/2012	Carruthers et al.	2003/0154128	A1	8/2003	Liga
8,340,994	B2	12/2012	Tota et al.	2003/0154475	A1	8/2003	Rodriguez et al.
8,346,605	B2	1/2013	Krikorian et al.	2003/0163375	A1	8/2003	Dombrowski et al.
8,365,230	B2	1/2013	Chane et al.	2003/0167449	A1	9/2003	Warren
8,434,118	B2	4/2013	Gonder et al.	2003/0167471	A1	9/2003	Roth et al.
8,464,302	B1	6/2013	Liwerant et al.	2003/0191816	A1	10/2003	Landress
8,473,868	B1	6/2013	Kauffman	2003/0204856	A1	10/2003	Buxton
8,479,246	B2	7/2013	Hudson et al.	2003/0208756	A1	11/2003	Macrae et al.
8,566,871	B2	10/2013	Knowles et al.	2003/0226150	A1	12/2003	Berberet
8,621,541	B2	12/2013	Ullman et al.	2003/0234819	A1	12/2003	Daly
8,644,354	B2	2/2014	George et al.	2004/0015989	A1	1/2004	Kaizu et al.
8,650,125	B2	2/2014	Akadiri	2004/0015998	A1	1/2004	Bokor
8,682,794	B2	3/2014	Akadiri	2004/0049788	A1	3/2004	Mori et al.
8,688,582	B2	4/2014	Akadiri	2004/0073919	A1	4/2004	Gutta et al.
8,707,354	B1	4/2014	Moreau et al.	2004/0078825	A1	4/2004	Murphy
8,713,595	B2	4/2014	Lemmons et al.	2004/0103120	A1	5/2004	Fickle et al.
8,843,978	B2	9/2014	Hardin	2004/0117844	A1	6/2004	Karaoguz et al.
8,955,029	B2	2/2015	Lewis	2004/0133918	A1	7/2004	Danker
8,997,136	B2	3/2015	Brooks et al.	2004/0136698	A1	7/2004	Mock
9,047,626	B2	6/2015	Akadiri	2004/0148626	A1	7/2004	Sakao et al.
9,055,325	B2	6/2015	Gaydou et al.	2004/0158855	A1	8/2004	Gu et al.
9,066,118	B2	6/2015	Diaz Perez	2004/0172419	A1	9/2004	Morris et al.
9,078,016	B2	7/2015	Diaz Perez	2004/0194141	A1	9/2004	Sanders
9,106,959	B2	8/2015	Diaz Perez	2004/0205816	A1	10/2004	Barrett
9,113,228	B2	8/2015	Diaz Perez	2004/0221325	A1	11/2004	Nakajima et al.
9,117,228	B1	8/2015	Akadiri	2004/0268250	A1	12/2004	Danker
9,232,275	B2	1/2016	Perez	2004/0268413	A1	12/2004	Reid et al.
9,292,866	B2	3/2016	Allaire et al.	2005/0044577	A1	2/2005	Jerding
9,349,136	B2	5/2016	Akadiri	2005/0049933	A1	3/2005	Upendran et al.
9,451,310	B2	9/2016	Akadiri	2005/0050218	A1	3/2005	Sheldon
				2005/0081237	A1	4/2005	Chen
				2005/0097600	A1	5/2005	Heer
				2005/0097622	A1	5/2005	Zigmond et al.
				2005/0097623	A1	5/2005	Tecot

(56)

## References Cited

## U.S. PATENT DOCUMENTS

2005/0129049 A1 6/2005 Srinivasan et al.  
 2005/0131837 A1 6/2005 Sanctis et al.  
 2005/0138560 A1 6/2005 Lee et al.  
 2005/0149987 A1 7/2005 Boccon-Gibod et al.  
 2005/0154679 A1 7/2005 Bielak  
 2005/0160458 A1 7/2005 Baumgartner  
 2005/0160465 A1 7/2005 Walker  
 2005/0166230 A1 7/2005 Gaydou et al.  
 2005/0188415 A1 8/2005 Riley  
 2005/0193015 A1 9/2005 Logston  
 2005/0203918 A1 9/2005 Holbrook  
 2005/0204388 A1 9/2005 Knudson et al.  
 2005/0210524 A1 9/2005 Dolph  
 2005/0216941 A1 9/2005 Flanagan et al.  
 2005/0229209 A1 10/2005 Hildebolt et al.  
 2005/0235318 A1 10/2005 Grauch et al.  
 2005/0235319 A1 10/2005 Carpenter et al.  
 2005/0239546 A1 10/2005 Hedrick  
 2005/0240961 A1 10/2005 Jerding et al.  
 2005/0240968 A1 10/2005 Knudson et al.  
 2005/0246752 A1 11/2005 Liwerant et al.  
 2005/0283800 A1 12/2005 Ellis et al.  
 2005/0289151 A1 12/2005 Burke  
 2006/0004914 A1 1/2006 Kelly et al.  
 2006/0015925 A1 1/2006 Logan  
 2006/0029093 A1 2/2006 Van Rossum  
 2006/0085830 A1 4/2006 Bruck et al.  
 2006/0123455 A1 6/2006 Pai  
 2006/0155850 A1 7/2006 Ma et al.  
 2006/0174260 A1 8/2006 Gutta  
 2006/0267995 A1 11/2006 Radloff et al.  
 2006/0287916 A1 12/2006 Starr et al.  
 2007/0016530 A1 1/2007 Stasi et al.  
 2007/0038567 A1 2/2007 Allaire et al.  
 2007/0157221 A1 7/2007 Ou et al.  
 2007/0157249 A1 7/2007 Cordray et al.  
 2007/0198532 A1 8/2007 Krikorian et al.  
 2007/0214482 A1 9/2007 Nguyen  
 2007/0245399 A1 10/2007 Espelien  
 2007/0250864 A1 10/2007 Diaz Perez  
 2007/0277201 A1 11/2007 Wong et al.  
 2008/0022298 A1 1/2008 Cavicchia  
 2008/0072260 A1 3/2008 Rosin et al.  
 2008/0127257 A1 5/2008 Kvache  
 2008/0141325 A1 6/2008 Ludvig et al.  
 2008/0148317 A1 6/2008 Opaluch  
 2008/0155613 A1 6/2008 Benya et al.  
 2008/0163292 A1 7/2008 Stallworth  
 2008/0163330 A1 7/2008 Sparrell  
 2008/0189749 A1 8/2008 White et al.  
 2008/0222687 A1 9/2008 Edry  
 2008/0276277 A1 11/2008 Ahn et al.  
 2009/0055868 A1 2/2009 Wehmeyer et al.  
 2009/0158334 A1 6/2009 Rodriguez et al.  
 2010/0138863 A1 6/2010 Diaz Perez  
 2010/0153999 A1 6/2010 Yates  
 2010/0175090 A1 7/2010 Cordray  
 2010/0211975 A1 8/2010 Boyer et al.  
 2010/0319040 A1 12/2010 Diaz Perez  
 2010/0325655 A1 12/2010 Perez  
 2011/0030012 A1 2/2011 Diaz Perez  
 2011/0030013 A1 2/2011 Diaz Perez  
 2011/0166918 A1 7/2011 Allaire et al.  
 2011/0191163 A1 8/2011 Allaire et al.  
 2013/0125158 A1 5/2013 Brown  
 2013/0254804 A1 9/2013 Diaz Perez  
 2013/0254809 A1 9/2013 Diaz Perez  
 2013/0254814 A1 9/2013 Diaz Perez  
 2015/0128192 A1 5/2015 Diaz Perez  
 2015/0237403 A1 8/2015 Perez  
 2015/0245099 A1 8/2015 Perez  
 2015/0264440 A1 9/2015 Perez  
 2015/0281792 A1 10/2015 Gaydou et al.  
 2015/0358649 A1 12/2015 Perez

2015/0358682 A1 12/2015 Perez  
 2015/0358683 A1 12/2015 Perez  
 2017/0295387 A1 10/2017 Akadiri

## FOREIGN PATENT DOCUMENTS

IE WO01038960 5/2001  
 JP 07-284035 10/1995  
 JP 11-150692 6/1999  
 JP 03-116121 4/2003  
 WO 89/12896 A1 12/1989  
 WO 90/15507 A1 12/1990  
 WO 9406084 A1 3/1994  
 WO 99/10822 A1 3/1999  
 WO 99/41684 A1 8/1999  
 WO 9950778 A1 10/1999  
 WO 01/010124 A1 2/2001  
 WO 01/10127 A1 2/2001  
 WO WO01022688 3/2001  
 WO 2002008948 A2 1/2002  
 WO 03/052572 A1 6/2003  
 WO WO03052572 6/2003  
 WO WO03069457 8/2003  
 WO WO 2007/021974 2/2007

## OTHER PUBLICATIONS

Judgment, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc., Nos. 2016-1082, 2016-1083 (CAFC Sep. 26, 2016) (2 pgs).  
 Affidavit of Milton Diaz Perez Under 37 C.F.R. 132, Jan. 20, 2012, submitted in U.S. Appl. No. 11/768,895.  
 VDO expands Webcasting possibilities, *Broadcasting & Cable*, Nov. 11, 1996.  
 Jose Alvear, "Web Developer.com Guide to Streaming Multimedia", Chapters 9 and 11, 1998.  
 Business Wire, "Ivex Announces ViewOps Internet Video Service; Allows Business Managers to View and Manage Operations Online," May 2, 2000.  
 Adams, *Open Cable Architecture* (Cisco Press 2000), Chapter 8-16.  
 ATSC Standard: Program and System Information Protocol for Terrestrial Broadcast and Cable (PSIP) (Dec. 23, 1997).  
 Attack of the \$500 Killer Network Computers: Time-Warner Cable's Full Service Network, *Network Computing* (Aug. 19, 2000)  
 Internet Archive, <https://web.archive.org/web/20000819050301/http://www.networkcomputing.com/616/616tw.html>.  
 CableLabs Video-On-Demand Asset Distribution Interface Specification, Version 1.1 (Sep. 27, 2002).  
 CableLabs Video-On-Demand Content Specification Version 1.1 (Jan. 7, 2004).  
 Declaration of Milton Diaz Perez, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Mar. 2, 2015).  
 Defendants' Joint Preliminary Invalidation Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).  
 Exhibit A, Defendants' Joint Preliminary Invalidation Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).  
 Exhibit B, Defendants' Joint Preliminary Invalidation Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).  
 Exhibit C, Defendants' Joint Preliminary Invalidation Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).  
 Exhibit E, Defendants' Joint Preliminary Invalidation Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).  
 Exhibit F, Defendants' Joint Preliminary Invalidation Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).  
 Exhibit G, Defendants' Joint Preliminary Invalidation Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

(56)

## References Cited

## OTHER PUBLICATIONS

Fickle et al., U.S. Appl. No. 60/429,966, filed Nov. 27, 2002.

Full Service Network and The Orlando Sentinel add interactive dining guide to GoTv, The Free Library, <http://www.thefreelibrary.com/Full+Service+Network+and+The+Orlando+Sentinel+add+interactive+dining...-a018299720> (published May 20, 1996, last visited Mar. 4, 2015).

Full Service Network(FSN) in Orlando, Florida, Hong Kong University of Science and Technology (May 4, 1997) Internet Archive, <https://web.archive.org/web/19970504203603/http://www.ust.hk/~webiway/content/USA/Trial/fsn.html>.

Full Service Network, Time Warner Cable, <http://m.history.timewarnercable.com/the-twc-story/era-1990-1995/Story.aspx?story=56> (last visited Mar. 4, 2015).

Full Service Network, Wikipedia, [http://en.wikipedia.org/w/index.php?title=Full\\_Service\\_Network&printable=yes](http://en.wikipedia.org/w/index.php?title=Full_Service_Network&printable=yes) (last visited Mar. 4, 2015).

Tanenbaum, Computer Networks, 4th ed. (Prentice Hall PTR 2003), pp. 1-14.

Time Warner Cable, DRAFT Asset Distribution System ("Catcher's Mitt") Functional Requirements, Version 1.0 (Jan. 26, 2000).

Time Warner Cable, ISA Data Download Delivery, Version 0.5 (Jun. 3, 2004).

Time Warner Cable, Pegasus Interactive Services Architecture, Version 1.4 (Jun. 5, 2003).

Time Warner Cable, The ISA Tutorial, Version 1.0 (Sep. 13, 2003).

Time Warner Cable's Full Service Network connects live to Innovations, AllBusiness (published Apr. 10, 1996, archived Mar. 25, 2008) Internet Archive, <https://web.archive.org/web/20080325024937/http://www.allbusiness.com/media-telecommunications/telecommunications/7218809-1.html>.

Time Warner introduces world's first full service network in Orlando; Network offers First . . . AllBusiness (published Dec. 14, 1994, archived May 22, 2009) Internet Archive, <https://web.archive.org/web/20090522134441/http://www.allbusiness.com/media-telecommunications/telecommunications/7087127-1.html>.

Time Warner will close its Full Service Network, Orlando Business Journal, <http://www.bizjournals.com/orlando/stories/1997/04/28/daily7.html> (last visited Mar. 4, 2015).

Time Warner's "Time Machine" for Future Video, The New York Times, <http://www.nytimes.com/.../12/business/time-warner-s-time-machine-for-future-video.html?pagewanted=2&pagewanted=print> (published Dec. 12, 1994, last visited Mar. 4, 2015).

Time Warner Cable, Request for Proposal and Functional Requirements Specification for Video-On-Demand (VOD) Systems, Version 2.0 (Apr. 25, 1997).

Time Warner Cable, Pegasus Movies on Demand Content Specification, Version 1.3 (Sep. 29, 2000).

Time Warner Cable, Pegasus Overall Flow: Movie Delivery, Version 1.0 (Feb. 18, 2004).

Patent Owner's Preliminary Response, Jan. 2, 2015, CBM2014-00189, *Hawaiian Telecom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Decision Denying Institution of Inter Partes Review, Jan. 5, 2015, IPR2014-01222, *Unified Patents v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

The Industry Standard, "Web Entertainment Gets Personal", Jan. 10, 2000, [www.thestandard.com](http://www.thestandard.com).

Affidavit of Milton Diaz Perez Under C.F.R. 132, Mar. 9, 2009, submitted in U.S. Appl. No. 10/909,192, filed Jul. 3, 2004.

Affidavit of Milton Diaz Perez, Ex. A, Wikipedia, "Cable Television in the United States", history, last modified Jan. 17, 2009, pp. 1-7, [http://en.wikipedia.org/wiki/Cable\\_Television\\_in\\_the\\_United\\_States](http://en.wikipedia.org/wiki/Cable_Television_in_the_United_States).

Affidavit of Milton Diaz Perez, Ex. B, Wikipedia, "Internet Television", history, last modified Feb. 5, 2009, pp. 1-4, [http://en.wikipedia.org/wiki/Internet\\_TV](http://en.wikipedia.org/wiki/Internet_TV).

Affidavit of Milton Diaz Perez, Ex. C, Wikipedia, "Content Delivery Network", history, last modified Feb. 10, 2009, pp. 1-6, [http://en.wikipedia.org/wiki/Content\\_Delivery\\_Network](http://en.wikipedia.org/wiki/Content_Delivery_Network).

Affidavit of Milton Diaz Perez, Ex. D, Wikipedia, "Walled Garden (technology)", history, last modified Feb. 3, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/Walled\\_Garden\\_\(technology\)](http://en.wikipedia.org/wiki/Walled_Garden_(technology)).

Affidavit of Milton Diaz Perez, Ex. E, Wikipedia, "User-generated TV", history, last modified Feb. 10, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/User-generated\\_TV](http://en.wikipedia.org/wiki/User-generated_TV).

Affidavit of Milton Diaz Perez, Ex. E1, Wikipedia, "ZeD", history, last modified Jan. 5, 2009, pp. 1-7, <http://en.wikipedia.org/wiki/ZeD>.

Affidavit of Milton Diaz Perez, Ex. E2, Wikipedia, "Current TV", history, last modified Feb. 5, 2009, pp. 1-5, [http://en.wikipedia.org/wiki/Current\\_TV](http://en.wikipedia.org/wiki/Current_TV).

Affidavit of Milton Diaz Perez, Ex. E3, Outloud.TV, tripatlas, circa 2003, <http://tripatlas.com/Outloud.tv>.

VOD Metadata—Project Primer, Overview of VOD Content Specification 1.0, 1.1, and 2.0, published by Cable Labs, circa 2002-2007, <http://www.cablelabs.com/projects/metadata/primer>.

xOD Capsule, issue dated Apr. 11, 2006, includes article "Bresnan Taps CMC for VOD", published by Communications, Engineering & Design Magazine, <http://www.cedmagazine.com/newsletter.aspx?id=67468>.

Comcast Media Center, Content Gateway, Content Distribution website, circa 2010, <http://www.comcastmediacenter.com/content-gateway>.

Petition for Inter Partes Review, IPR2014-01222, *Unified Patents, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Petition for Covered Business Method Review, CBM2014-00189, *Hawaiian Telecom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Time Warner, Time Warner Cable Launches Quick Clips, <http://www.timewarner.com/newsroom/press-releases/2006/09/28/time-warner-cable-launches-quick-clips> (published Sep. 28, 2006, last visited Jun. 26, 2015).

Time Warner Cable, Photos & Video Go from Digital Cameras to Television with Free, New Time Warner Cable Product, [http://www.timewarnercable.com/en/about-us/press/photos\\_video\\_go\\_fromdigitalcamerastotelevisionwithfreewar.html](http://www.timewarnercable.com/en/about-us/press/photos_video_go_fromdigitalcamerastotelevisionwithfreewar.html) (published Apr. 27, 2007, last visited Jun. 26, 2015).

EPO Communication for European Application No. 05778412.6 dated Feb. 24, 2017.

Order Granting in Part and Denying in Part Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Sep. 29, 2015) (77 pgs).

Judgment, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Oct. 9, 2015) (4 pgs).

Order Granting Defendant Hawaiian Telecom, Inc.'s Motion for Summary Judgment of Invalidity Under 35 U.S.C. § 101, *Broadband iTV, Inc. v. Hawaiian Telecom, Inc.*, No. 14-00169 (D. Haw. Sep. 29, 2015) (43 pgs).

Judgment, *Broadband iTV, Inc. v. Hawaiian Telecom, Inc.*, No. 14-00169 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, *Broadband iTV, Inc. v. Hawaiian Telecom, Inc.*, No. 14-00169 (D. Haw. Oct. 9, 2015) (4 pgs).

International Search Report, dated Mar. 6, 2006, in PCT International Application US2005/027376, of Broadband iTV, Inc.

International Search Report, dated Sep. 15, 2009, in PCT International Application US2008/003341, of Broadband iTV, Inc.

International Search Report, dated Nov. 28, 2008, in PCT International Application US2008/007980, of Broadband iTV, Inc.

EPO Communication for European Application No. 08726793.6, dated May 30, 2016.

(56)

**References Cited**

OTHER PUBLICATIONS

EPO Communication for European Application No. 08768802.4, dated May 30, 2016.

PTAB Decision Denying Institution of Covered Business Method Patent Review, Apr. 1, 2015, CBM2014-00189, *Hawaiian Telcom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (5 pgs).

Memorandum in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474-1), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (49 pgs).

Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 475), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (12 pgs).

Declaration of Nathan L. Brown (ECF 475-1), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (6 pgs).

Exhibits 1 (ECF 475-2), 4 (ECF 475-5), 5 (ECF 475-6), and 6 (ECF 475-7) to Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (133 pgs).

Plaintiffs Opposition to Defendants Time Warner Cable, Inc. and Oceanic Time Warner Cable, LLC's Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 561), *Broad-*

*band iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (52 pgs).

Plaintiff Broadband iTV, Inc.'s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.'s Concise Statement of Facts (ECF 562), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Declaration of Keith A. Jones (ECF 562-1), Inc.'s Concise Statement of Facts, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Exhibits 1-10 (ECF 562-2-ECF-11), 12 (ECF 562-13), 14 (ECF 562-15), 16-17 (ECF 562-17-562-18), and 19-20 (ECF 562-20-562-21) to Plaintiff Broadband iTV, Inc.'s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.'s Concise Statement of Facts, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (508 pgs).

*Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*; BBiTV Petition for a Writ of Certiorari (Sup. Ct. Apr. 13, 2017 (No. 16/1241)).

Order List 581 U.S. Sup. Ct.- Monday, May 22, 2017—*Broadband iTV, Inc. v. Hawaiian Telcom, Inc., et al.*, Petition for Writ of Certiorari Denied (p. 7).

Ciciora, Farmer, & Large, Modern Cable Television Technology (Morgan Kaufmann Publishers, Inc. 1999), 18 pages.

Brief of Amici Curiae Broadband iTV, Inc., Double Rock Corporation, Island Intellectual Property, LLC, Access Control Advantage, Inc., and Fairway Financial U.S., Inc. In Support of Appellants, *Nefflix, Inc. v. Rovi Corporation et al.*, No. 2015-1917 (Fed. Cir. Dec. 18, 2015).

Consolidated Brief for Appellant Broadband iTV, Inc., *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 21, 2016).

Amicus Brief of United Inventors Association of the United States of America in Support of Appellant Broadband iTV, Inc. and Reversal, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 27, 2016).

Amicus Brief by Tranxition, Inc., *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 28, 2016).

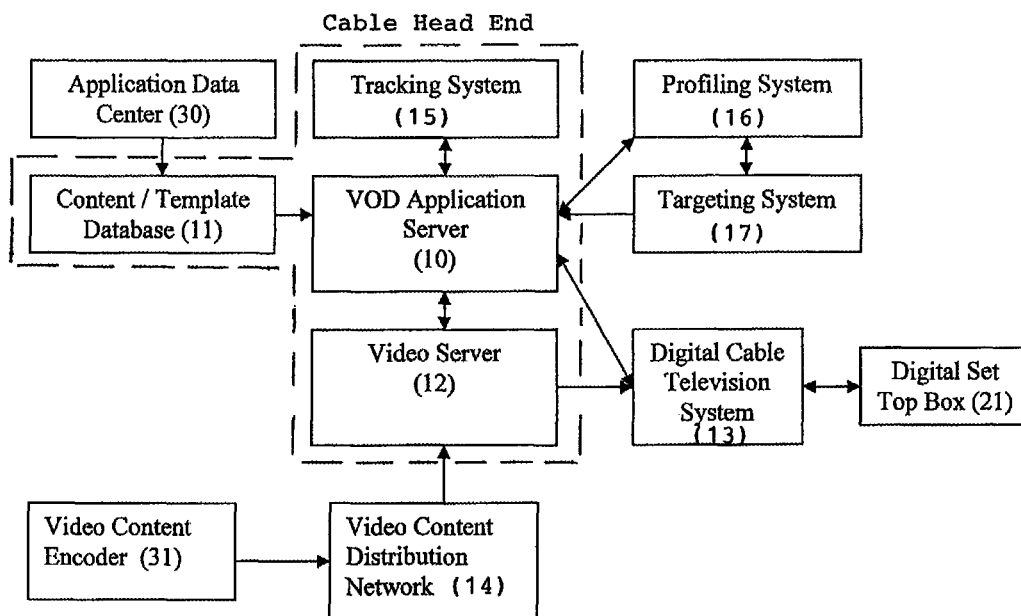


Figure 1A: VOD Content Delivery System, Overall Architecture

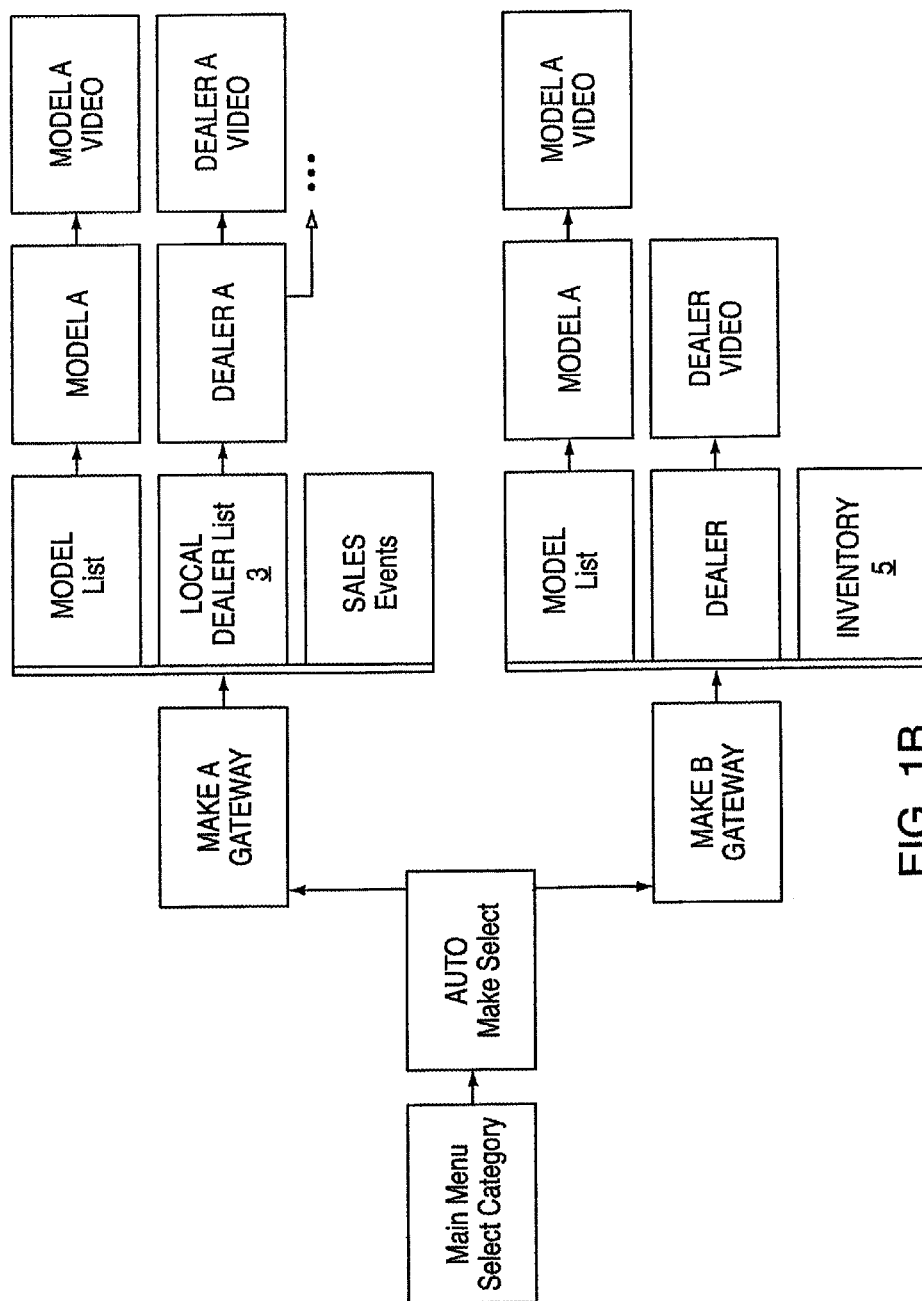
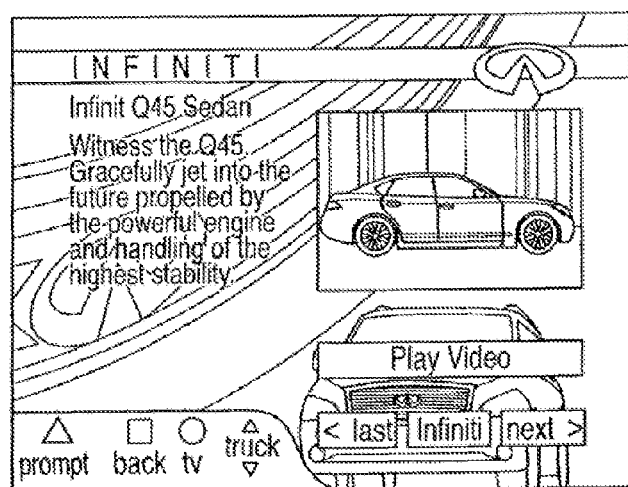


FIG. 1B



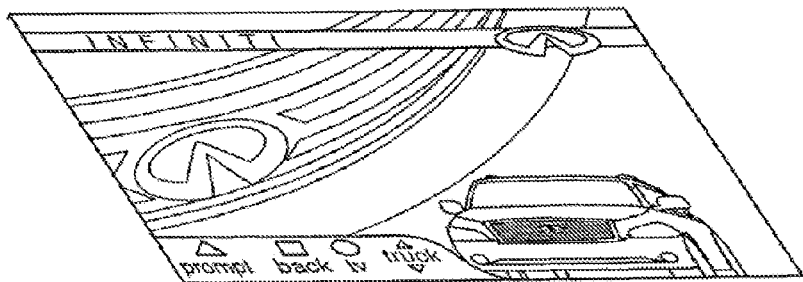
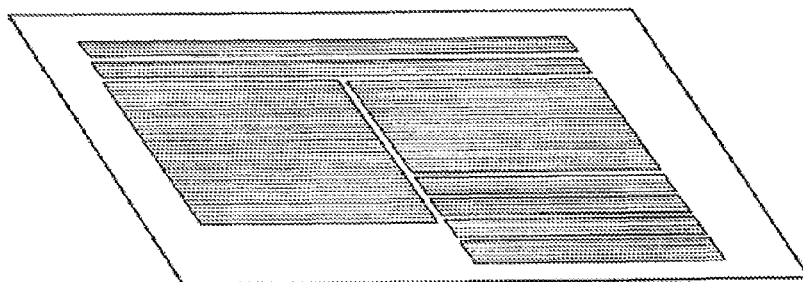
Infiniti Q45 Sedan  
Witness the Q45.  
Gracefully jet into the  
future propelled by  
the powerful engine  
and handling of the  
highest stability.



Play Video

< last Infiniti next >

FIG. 1C





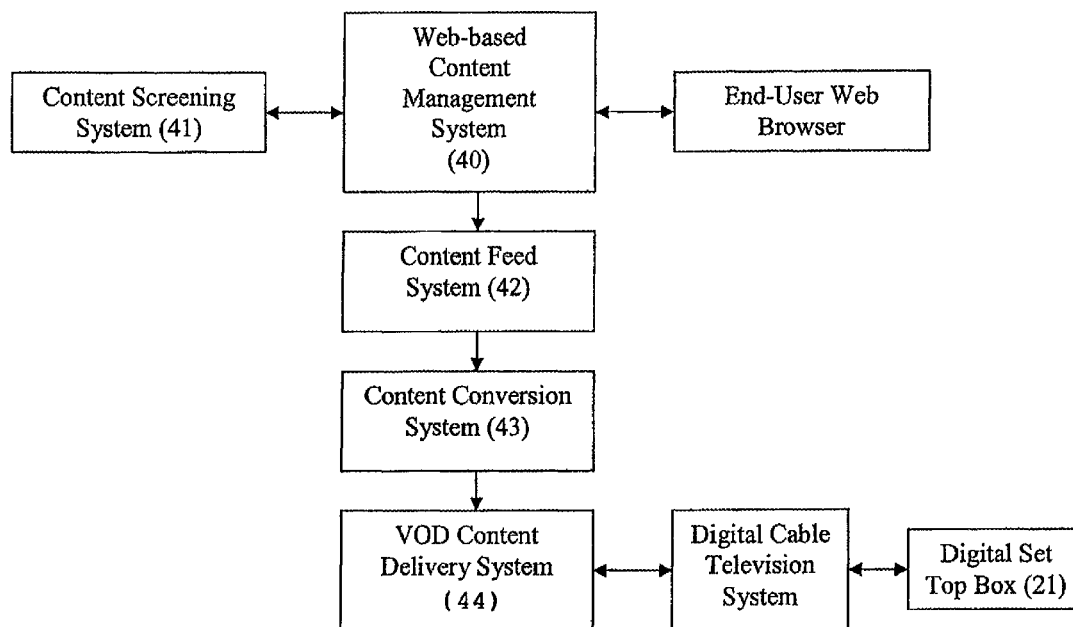


Figure 2A: Classified Ad System, Overall Architecture

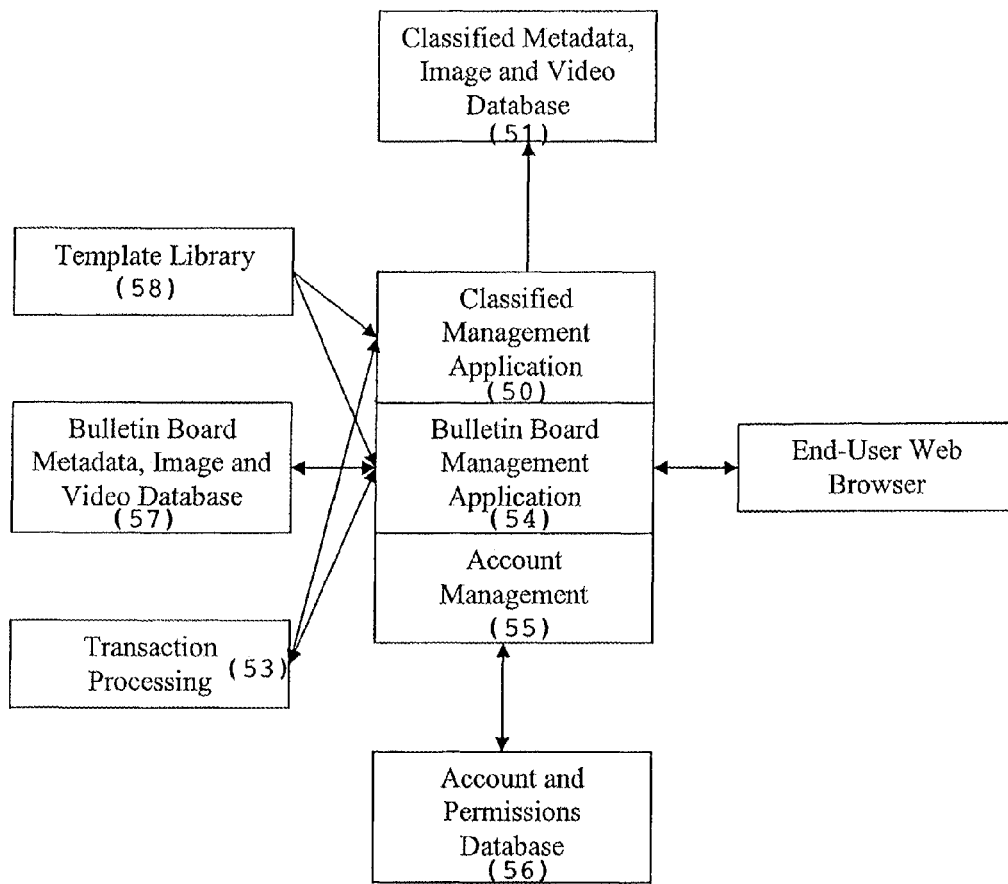


Figure 2B: Web-based Content Management System

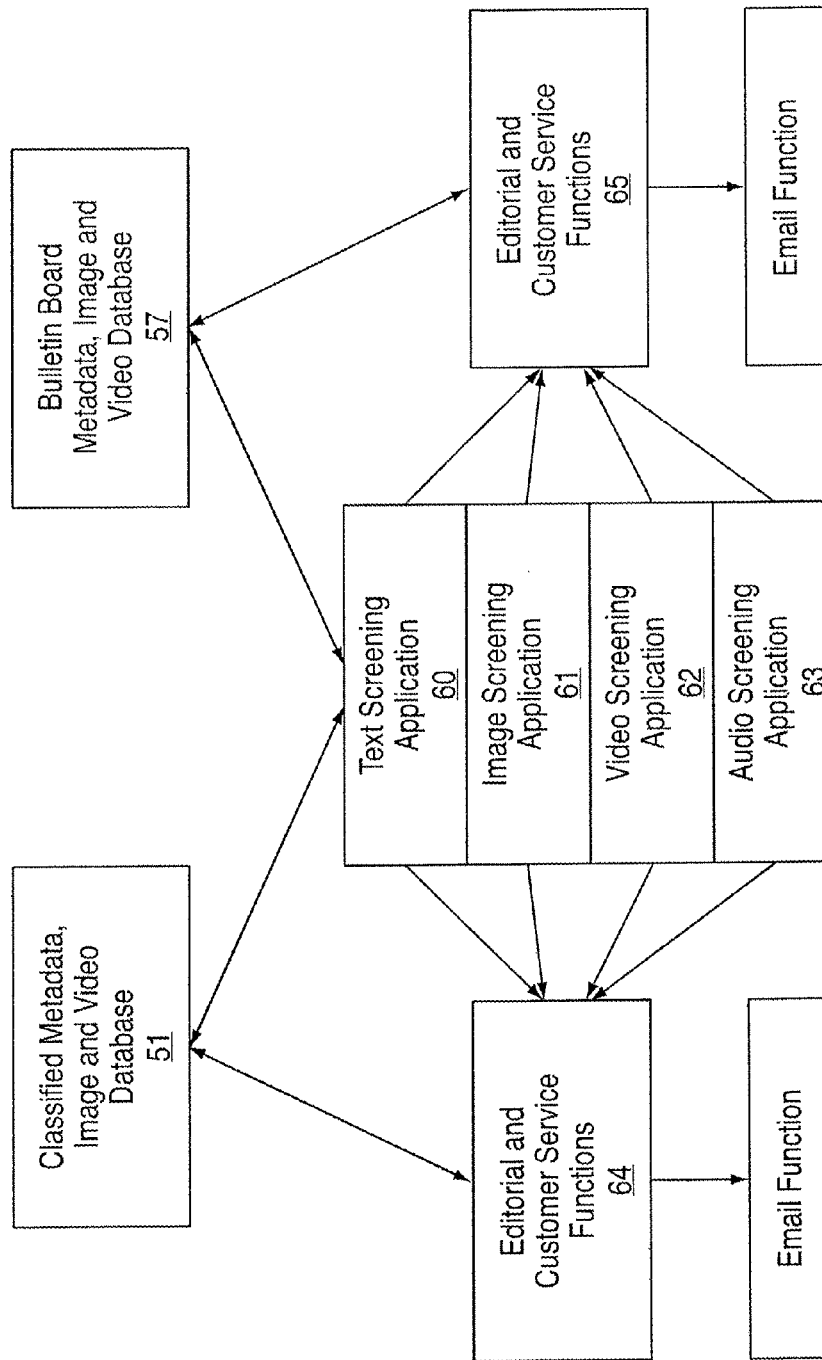
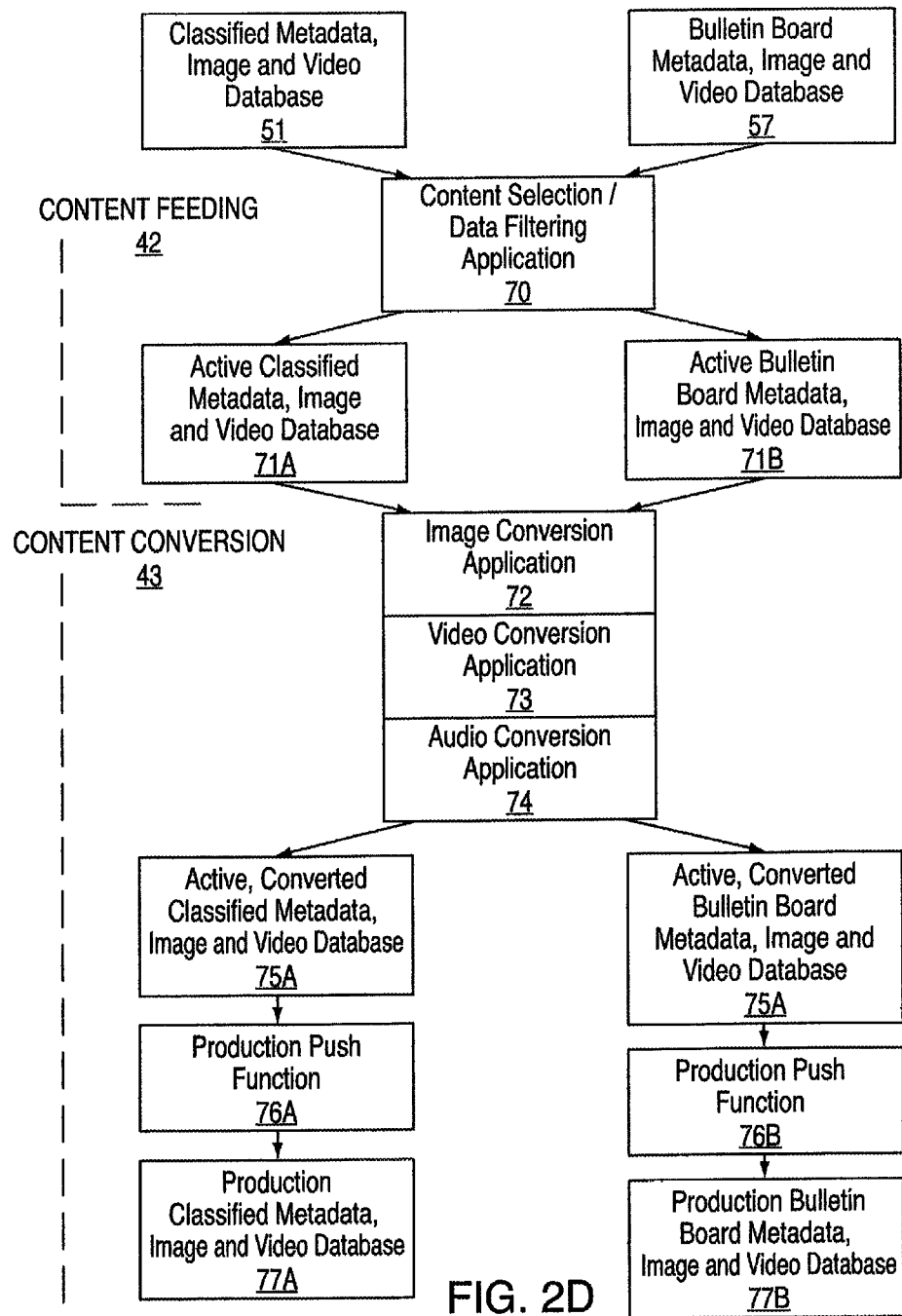


FIG. 2C



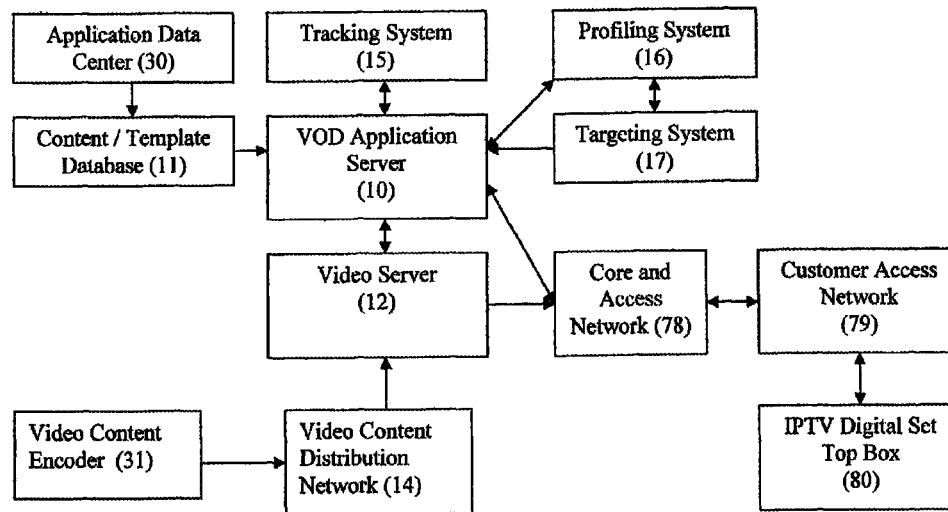


Figure 3: VOD Content Delivery System, Overall Architecture for IPTV System

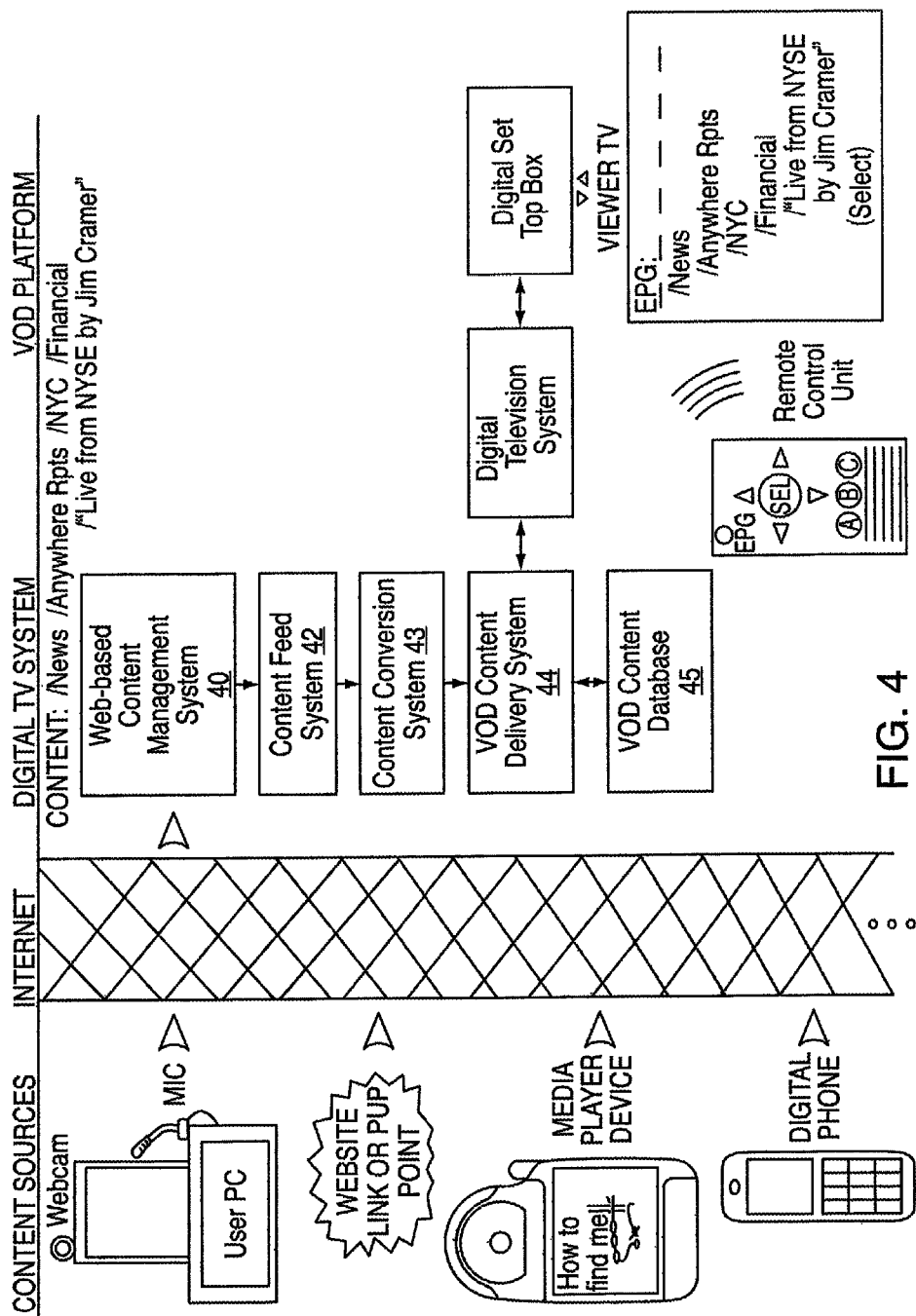


FIG. 4

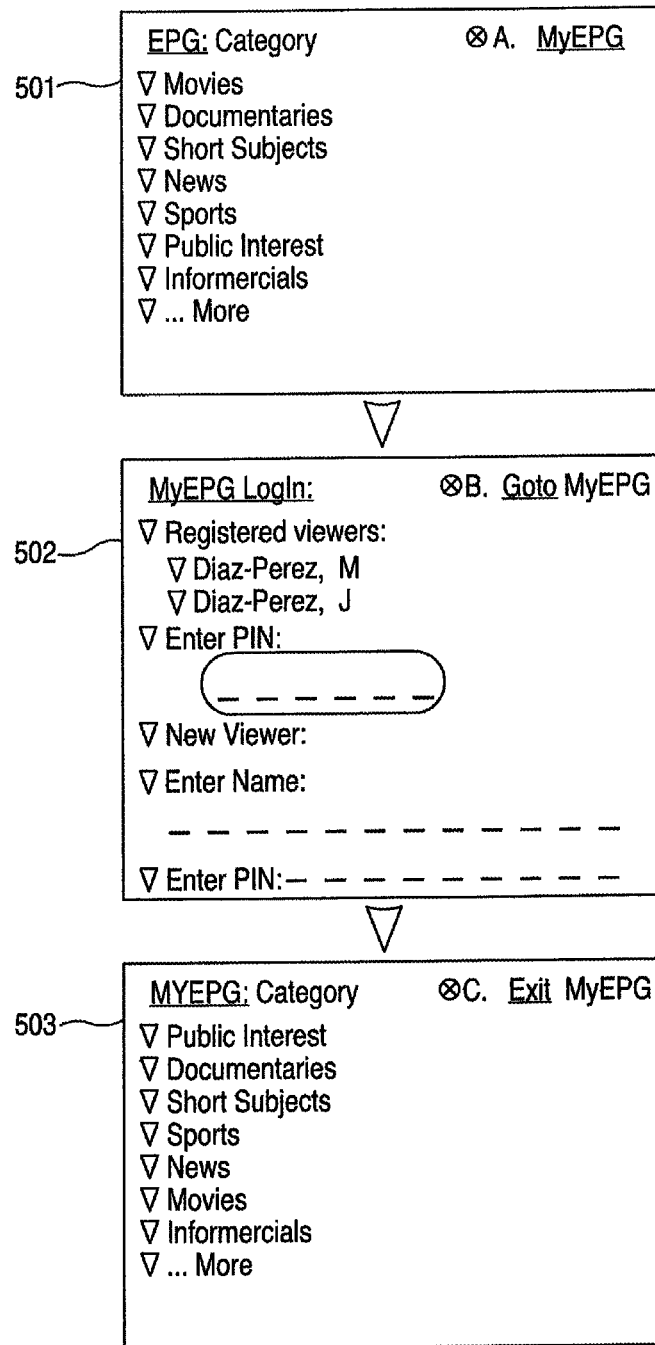


FIG. 5

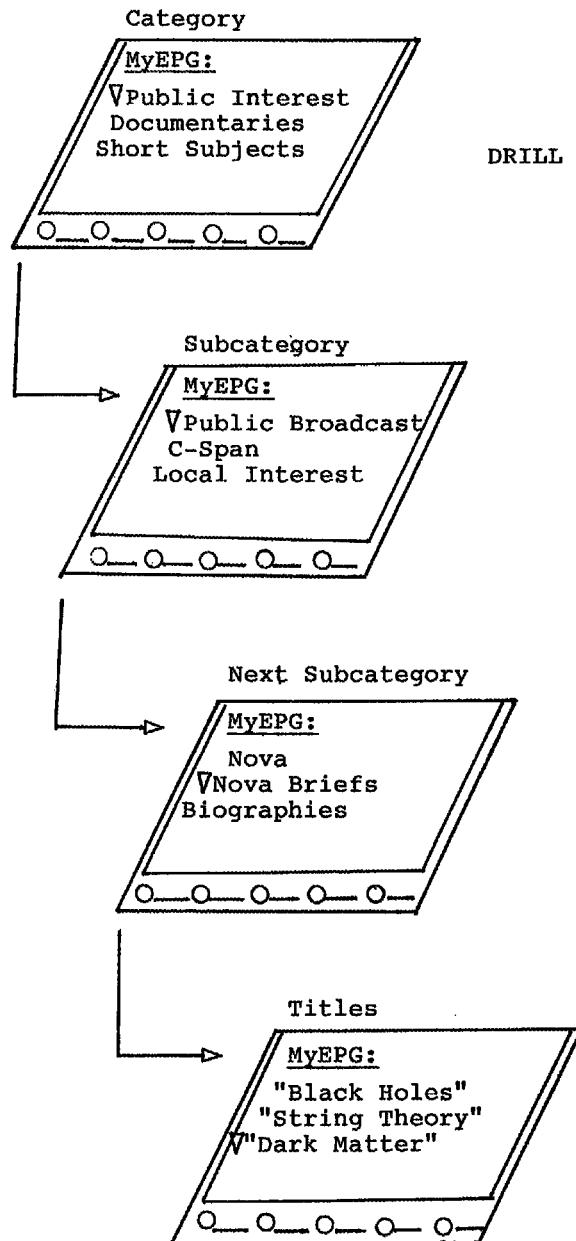


FIG. 6  
DRILL DOWN EPG NAVIGATION

Hierarchical Address: /Public Interest/PBS/NovaBriefs/"Dark Matter"



Fig. 7A  
REORDERING EPG DISPLAYS  
PROCESS LEVEL

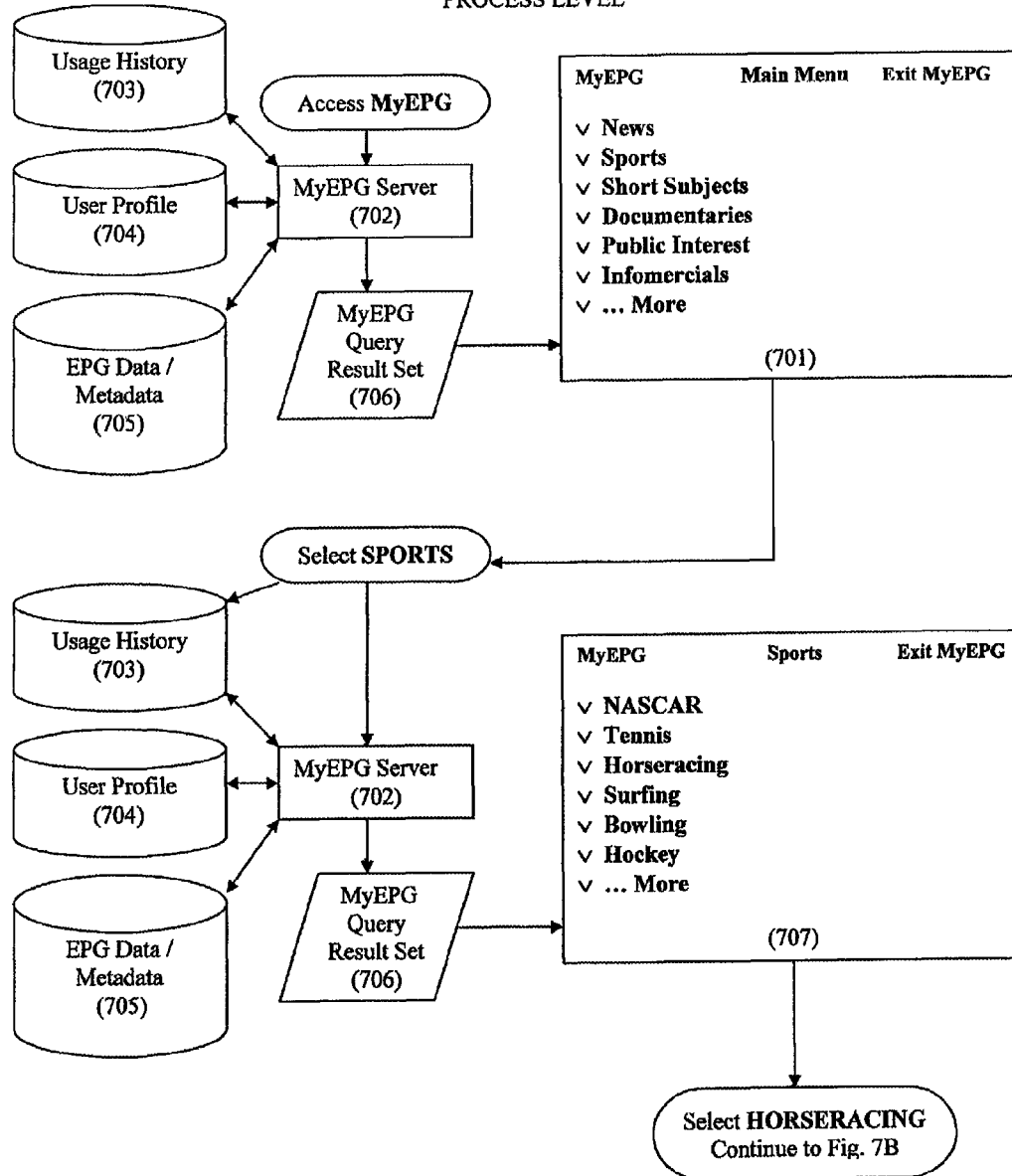


Fig. 7B  
REORDERING EPG DISPLAYS  
PROCESS LEVEL (cont.)

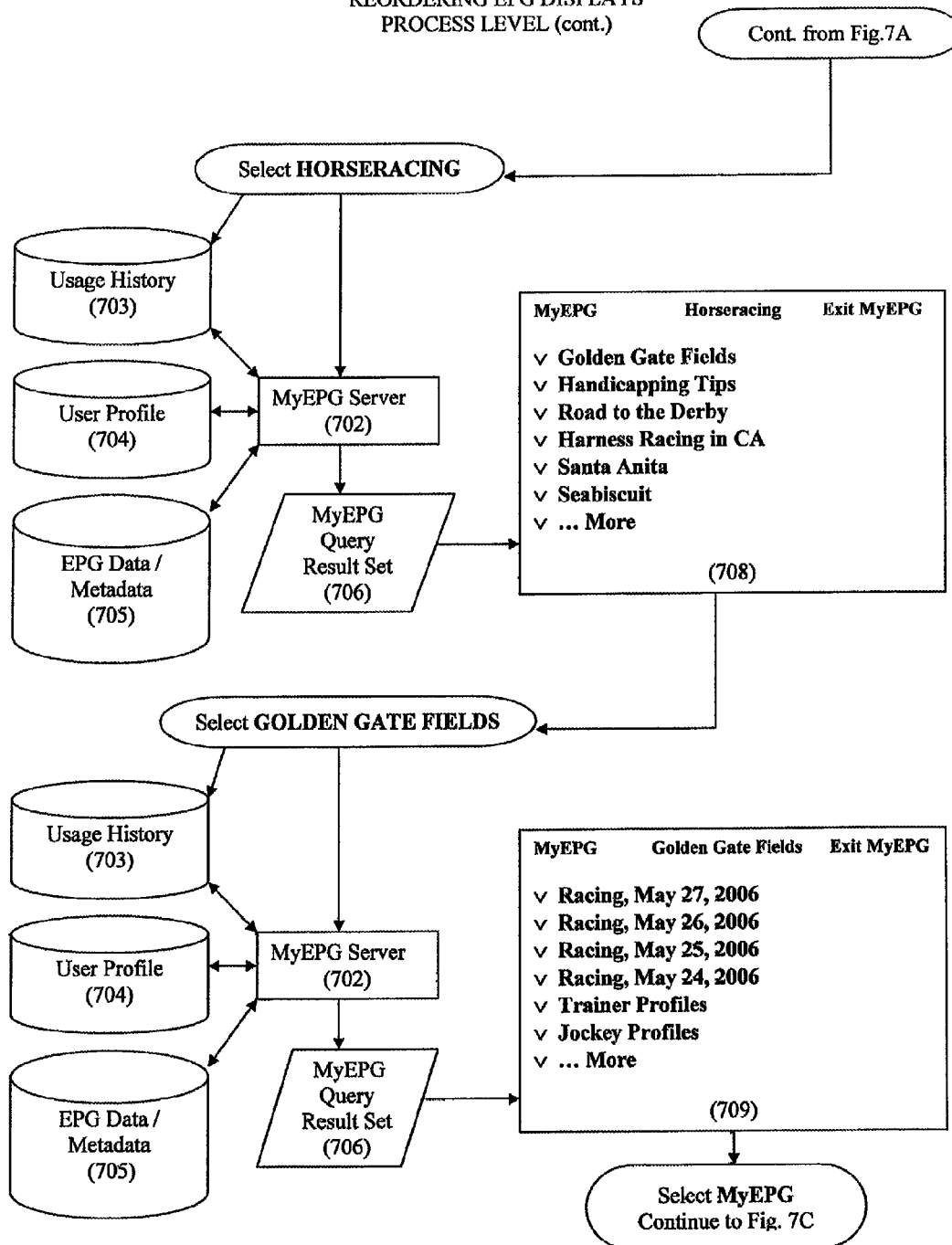


Fig. 7C  
REORDERING EPG DISPLAYS  
PROCESS LEVEL (cont.)

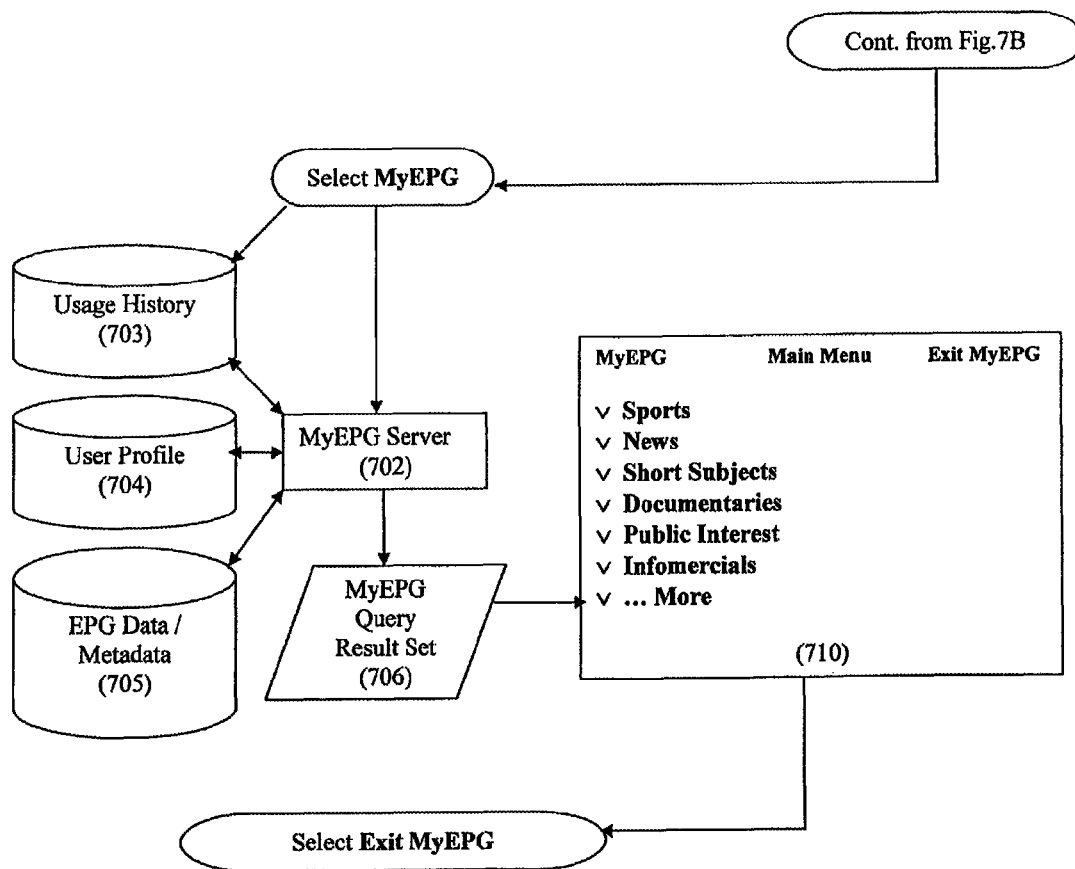


Fig. 8A  
MyEPG CATEGORY CREATION

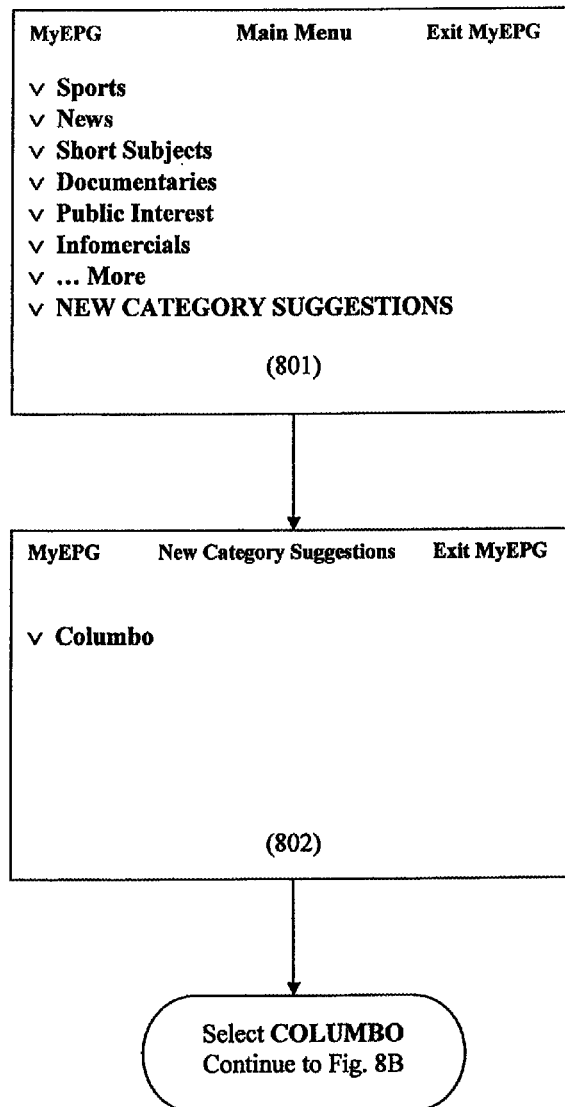


Fig. 8B  
MyEPG CATEGORY CREATION

MyEPG	New Category Confirmation	Exit MyEPG
<b>Columbo</b>		
✓ Press 1 to accept new category		
✓ Press 2 to reject new category		
(803)		

MyEPG	Main Menu	Exit MyEPG
✓ Sports		
✓ Columbo		
✓ News		
✓ Short Subjects		
✓ Documentaries		
✓ Public Interest		
✓ ... More		
(804)		

# **DYNAMIC ADJUSTMENT OF ELECTRONIC PROGRAM GUIDE DISPLAYS BASED ON VIEWER PREFERENCES FOR MINIMIZING NAVIGATION IN VOD PROGRAM SELECTION**

This U.S. patent application is a continuation application claiming the benefit of co-pending U.S. patent application Ser. No. 11/768,895, filed on Jun. 26, 2007. This application is further related to U.S. patent application Ser. No. 11/685,188 filed on Mar. 12, 2007, issued as U.S. Pat. No. 7,631,336 on Dec. 8, 2009, and U.S. patent application Ser. No. 10/909,192 filed on Jul. 30, 2004, issued as U.S. Pat. No. 7,590,997 on Sep. 15, 2009, all being by the same inventor and incorporated in their entirety by reference as if fully set forth herein.

## **TECHNICAL FIELD**

This invention generally relates to the provision of video content to viewers through digital TV infrastructure, and more particularly, to converting, navigating and displaying video content uploaded from the Internet on a digital TV video-on-demand platform.

## **BACKGROUND OF INVENTION**

Cable television (CATV) systems are used to deliver television services to a vast majority of TV-viewing homes in the U.S. and other technologically advanced countries. The typical CATV system has a cable service provider head end equipped with video servers to transmit CATV program signals through distribution cable lines to local nodes and from there to TV subscriber homes. Within the subscriber homes, the CATV input TV line is connected to one or more customer-premises TVs which are coupled to external set-top boxes for channel tuning or are equipped with internal cable channel tuners. CATV service providers employ the spacious 1 GHz bandwidth of the typical cable (RG-6) line to carry tens of analog TV channels in the portion of the cable bandwidth allocated to analog TV signals. With digital multiplexing methods such as QAM, hundreds of digital TV signals can be carried simultaneously in the portion of the cable bandwidth allocated to digital TV signals. Cable TV service providers have also allocated portions of the cable bandwidth for user (return) data, broadband data connection, and voice-over-IP (VoIP) digital telephone service.

Cable TV service providers generally offer subscribers to subscribe to any of several tiers of bundled TV services on a scale with increasing rates in accordance with signal quality, TV program offerings, and types of interactive services. Digital TV services are offered through advanced digital set-top boxes that are individually addressable from the CATV head end, and also allow subscribers various interactive functions with the CATV head end via inputs to the set-top box via the remote control unit for transmission on the return data path to the CATV head end.

A recent type of interactive television service offered on digital TV systems is referred to generally as a "video-on-demand" (VOD) system, wherein a viewer can navigate through a program guide via the remote control unit and send a request via the set-top box for a desired video program to be addressed from the head-end to the subscriber's set-top box for display on the TV. Different types of VOD programs are typically bundled as a package and offered on different VOD "channels". For example, a VOD "channel" can offer on-demand movies and videos, replay

sports events, infomercials, advertisements, music videos, short-subjects, and even individual TV "pages". VOD-based interactive television services generally allow a viewer to use the remote control to cursor through an on-screen menu and select from a variety of titles for stored video programs for individual viewing on demand. Advanced remote control units include button controls with VCR-like functions that enable the viewer to start, stop, pause, rewind, or replay a selected video program or segment. In the future, VOD-based interactive television services may be integrated with or delivered with other advanced interactive television services, such as webpage browsing, e-mail, television purchase ("t-commerce") transactions, and multimedia delivery.

Digital cable TV is currently the most prevalent system for offering digital TV services to home TV subscribers. However, other types of digital carriers offering broadband connections to subscriber homes have entered into competition with cable TV providers by offering digital TV services over their broadband connections. Examples of other broadband connections include DSL telephone lines, local area broadband networks, and wireless broadband networks. Digital television services offered on such broadband connections employ the TCP/IP data transport protocol and are referred to as Internet Protocol Television (IPTV). Instead of multi-casting all TV program signals into a cable line, the typical IPTV system will respond to a subscriber's request for a particular TV channel or video program by transmitting the video content individually to the subscriber's individually addressable, digital set top box at high speeds. IPTV and digital cable TV both transmit digital video in packetized data streams within closed, proprietary broadband systems; however, IPTV uses the Internet Protocol (IP) to structure, route and deliver the digital video packets within an IPTV system.

With the increasing interactive functionality and customer reach of interactive television services, advertisers and content providers are finding it increasingly attractive to employ on-demand advertising, on-demand program content, and on-demand TV transactions for home viewers. VOD content delivery platforms are being designed to seamlessly and conveniently deliver a wide range of types of advertising, video content, and transaction services on demand to home viewers. VOD content offerings are expected to increase dramatically from a few "channels" with a few score or hundred "titles" listed on each today to scores or hundreds of channels with thousands if not millions of titles on each in the foreseeable future. The VOD platform thus offers a gateway for greatly expanding TV viewing from a relatively small number of studio-produced program channels to a large number of new commercial publishers and ultimately a vast number of self-publishers or so-called "citizen" content publishers. It is deemed desirable to find a way for such vast numbers of content publishers to transmit their programs to the home TV, and to enable home TV viewers to find something of interest for viewing among the vast numbers of new programs.

## **SUMMARY OF THE INVENTION**

In accordance with the present invention, a method for dynamic adjustment of an electronic program guide (EPG) for navigating to video content offered on a video-on-demand (VOD) platform of a digital TV service provider comprises:

(a) maintaining a listing of category names for respective categories of video content to which a viewer can navigate using the EPG for the VOD platform;

(b) tracking a viewer's past history of selections of category names for video content in the EPG and determining an order of relevance of the category names for viewer selection of video content based on said past history; and

(c) reordering a current display listing of the category names based on said determined order of relevance.

In a preferred implementation, the order of relevance is determined in order of frequency of selection of category names based on the viewer's past history of category name selection. As an extension, order of relevance may be determined based on other parameters, such as time-of-day, weekday or weekend, or preference indicated by past selections of TV program titles. The reordered EPG display listing may list a predetermined number of category names of higher relevance, while maintaining all other category names of lower relevance out-of-sight on another display page to be accessed by activating a "More" button.

Each title is categorized within hierarchically-arranged categories and subcategories of the EPG which make up a unique hierarchical address for the title. The hierarchical address may be represented by a string of category and subcategory terms and the title delimited by standard delimiters. The hierarchical address can be shared as bookmarks the TV program with other TV subscribers or friends or contacts on the Internet.

The reordering of category names is provided by linking the viewer from a generalized EPG for all viewers on the VOD platform to a viewer-individualized EPG. The viewer-individualized EPG is accessed through a LogIn step by which the individual viewer is identified. In the LogIn step, the viewers of a subscriber household can register their names and personal identification numbers (PIN) for quick logins. The viewer-individualized EPG tracks the categories and subcategories the individual viewer clicks on and adds it to the viewer's past history. The tracking continues until the viewer logs off or the TV viewing session is ended. Besides reordering, the tracking of viewer navigation clicks and viewing preferences can be used to automatically create subcategories of TV programs of the type most frequently clicked on by the viewer, as well as for reordering in other VOD schema.

The present invention also encompasses an electronic program guide (EPG) for viewer navigation to titles for items of video content stored on a video-on-demand (VOD) platform comprising:

- (a) each item of video content being assigned a title and a hierarchical address corresponding to hierarchically-arranged categories and subcategories within which the title for the video content is to be categorized;
- (b) a listing of at least a top level of category names for respective categories of video content maintained by the EPG for the video content;
- (d) a viewer's past history of selections of category names for video content maintained in association with the EPG and used to determine an order of relevance of category names for viewer selection of video content based on said past history; and
- (e) a current display listing of category names for the EPG in which the category names are reordered based on said determined order of relevance.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1A is a diagram of an overall architecture for a VOD Content Delivery System in accordance with the present

invention, FIG. 1B shows an example of templated Drill-Down Ad navigation, and FIG. 1C shows an example of the templated ad display model.

FIG. 2A is a process flow diagram of the overall architecture of a Classified Ad application for the VOD Content Delivery System, FIG. 2B illustrates a Content Management Website for the Classified Ad application, FIG. 2C illustrates a Content Screening Component of the system, and FIG. 2D illustrates a Content Feed and Conversion Components of the system.

FIG. 3 is a diagram of a VOD Content Delivery System adapted to Internet Protocol TV (IPTV) system.

FIG. 4 is a diagram illustrating a process flow for enabling content publishers on the Internet to upload video content to digital television service providers for viewing on the home TV.

FIG. 5 is a diagram illustrating access to an individualized-viewer EPG for tracking a viewer's past history of selection of EPG category names and titles for reordering the EPG for faster navigation.

FIG. 6 is a diagram illustrating implementation of the reordering of EPG display listings using drill-down display templates for reordering the EPG navigation displays.

FIG. 7A is a process flow diagram of the overall architecture of an individualized-viewer EPG as a user navigates the hierarchical levels of program information. FIG. 7B is the continuation of FIG. 7A as the user navigates further into the hierarchy. FIG. 7C is a diagram illustrating the effects of usage data upon the order of content selections within the individualized-viewer-EPG display.

FIG. 8A is a diagram illustrating the recommendation to the user by the individualized-viewer-EPG system of new EPG categories based on viewer behavior. FIG. 8B is the continuation of FIG. 8A as the user navigates further into the hierarchy.

#### DETAILED DESCRIPTION OF INVENTION

The following description describes one preferred embodiment for implementation of the invention in which the digital television service provider is one employing cable TV infrastructure. However, it is to be understood that the principles of the invention are equally applicable to other types of digital television service providers offering digital TV services over other broadband connections such as DSL telephone lines, local area broadband networks, and wireless broadband networks. Similarly, certain examples of VOD applications are described herein, e.g., advertisements that are navigated in "drill-down" fashion, and the uploading of consumer-generated classified ads to be viewed as TV classified ads. However, many other types of video content may be used in programming with this system.

A VOD "channel" is a term commonly used for the mechanism by which users access and view VOD content. "Channel" historically refers to linear broadcast channels, and VOD by definition is a non-linear, on-demand experience. When a user accesses a VOD "channel" on a digital television system, they are accessing a digital "virtual channel", where the tuning of the channel number triggers the digital set top box to load and execute an interactive application that is presented on the television. This application will present the categories, subcategories and titles of VOD content that is available for viewing. The user navigates through the application using the remote control, traversing the hierarchy used to organize the VOD content. When the user selects a VOD title for playback, the digital VOD content is transmitted from a VOD server to the set top box

5

using a dedicated data stream. The actual mechanisms for transmission vary for different digital television system technologies, but in all cases the stream is unicast to the specific set top box. The set top box receives and decodes the data stream and presents the VOD content on the television. A digital television system can support many VOD "channels", where each "channel" is an interactive application that offers VOD content that has been grouped together by topic, sponsor, content producer or other attributes. As available bandwidth increases in digital television systems, there will be an increase in quantity of the VOD "channels" available to the user, as content producers migrate from the linear broadcast format to the non-linear on-demand format. Correspondingly, as the processing power of set top boxes increases, combined with greater network bandwidth, the sophistication of the interactive applications supporting VOD "channels" will increase, offering enhanced ways for interacting with the content and the producer, as well as offer related content and materials, transactions and other methods for engaging the user more completely with the content.

Referring to FIG. 1A, an overall system architecture for a VOD content delivery system includes a VOD Application Server **10** located at a Cable Head End. The VOD Application Server **10** manages a Database **11** of templates and video content segments from Video Server **12** for generating templated VOD content. The VOD content is generated in response to a viewer request signal transmitted from the Digital Set Top Box **21** of a viewer's TV equipment through the Digital Cable Television System **13** to the VOD Application Server **10** at the Cable Head End. The VOD Application Server **10** may be of the type which enables any compatibly-developed VOD applications to be loaded on and operated on the server. An example of such a VOD Application Server is the Navic N-Band™ server, offered by Navic Systems, Inc., d/b/a Navic Networks, of Needham, Mass. This is an integrated system which provides an application development platform for third party application developers to develop new VOD service applications, viewer interfaces, and ancillary interactive services for deployment on VOD channels of CATV operators in cable service areas throughout the U.S. A detailed description of the Navic N-Band system is contained in U.S. Patent Application 2002/066,106, filed on May 30, 2002, which is incorporated herein by reference.

Templates for displaying VOD content are created at an Application Data Center **30** and stored in the Database **11** for use by the operative VOD application. The templates may be designed, for example, to present video ad content displays in a logo frame, or to provide navigation buttons and viewer selection options in a frame around currently displayed video content. In the preferred embodiment described in greater detail below, the templates are used to provide navigation aids in a series of progressively more focused ad display types. A Video Content Encoder **31** is used to encode raw video feeds into formatted video content segments compatible with the VOD platform and supply them through a Video Content Distribution Network **14** to the Video Server **12**.

In operation, the VOD Application Server **10** operates a VOD application for the CATV system, for example, "automobile infomercials on demand". The viewer sends a request for selected VOD content, such as to see an infomercial on a specific model type made by a specific auto manufacturer, by actuating a viewer request signal by a key press on the viewer's remote control unit transmitting an IR signal to the Set Top Box **21** that is sent on a back channel of the Digital Cable Television System **13** to the VOD

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Application Server **10** at the Cable Head End. In response to the signal, the VOD Application Server **10** determines the VOD content being requested and retrieves the infomercial ad display template from the Template Database **11** and video content segment from the Video Server **12**, in order to generate the corresponding templated VOD content. In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server **10** retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a "drill-down navigation" method to find specific end content of interest.

Referring to FIG. 1B, a preferred embodiment of the templated VOD content delivery system is shown providing a User Interface using Drill-Down Navigation through display ads, such as for automobile infomercials. When the viewer selects a VOD application (channel), such as "Wheels-On-Demand", the viewer's TV displays a Main Menu with buttons inviting the viewer to "Select Category". The viewer can select an "Auto" category, and the TV then displays an "Auto" menu with buttons inviting the viewer to "Select Make", such as Make A, Make B, etc. When the viewer makes a selection, such as Make A, the viewer's TV displays a further menu that is a Gateway into templated VOD content delivery which enables Drill-Down Navigation by templated display ads. Through the Gateway, the VOD Application leaves the Menu mode and enters the Drill Down Navigation mode for successively displays of hierarchically-ordered video content which allow the viewer to navigate to progressively more focused content. In this example, the highest level of the hierarchy includes categories for Model, Local Dealer, Sales Events, and/or Inventory. When the viewer selects a category such as "Model" from the Gateway, for example, the VOD Application creates a templated ad display showing video content generic to all models by that automaker framed in a frame which has links (buttons or choices) for a list of the specific models made by that automaker. When the viewer selects the link to a specific model, "Model A" for example, the VOD Application creates a templated ad display showing video content for Model A, and the viewer can then choose to run a long-form infomercial of the Model A video. Alternatively, the Drill-Down Navigation can continue with further levels of specificity, such as "Custom Packages", "Options", "Colors/Stylings", etc. Similarly, the selection of the "Local Dealer" category from the Gateway can bring up a templated ad for local dealers with links to specific local dealers in the viewer's cable service area, and a click on a specific "Dealer A" can bring up a templated ad for Dealer A with further links to more specific content pertaining to Dealer A, such as "Current Sales Promotions", etc.

In this manner, the templated VOD content delivery system allows the viewer to navigate to specific content of high interest to the viewer using the Drill-Down ads as a navigation tool, while at the same time having a unique visual experience of moving through a series of ads mirroring the viewer's path to the subject of interest. The templated VOD ads are generated dynamically by searching the Content/Template database with each request by a viewer, enabling the system to display updated navigation choices and content simply by updating the database with updated links and video content. For example, if the Auto Maker



changes the Model types of autos currently available, or if Local Dealer A changes its current sales promotions for autos currently available, that advertiser's ads can be updated with new, template frame navigation links and content, instead of entirely new ads or screen displays having to be shot, produced, contracted, delivered, and programmed with the cable TV company. Many other types of layered or indepth ads, subjects, and interactive TV applications can be enabled with the use of the Drill-Down Navigation method. The selections or preferences exhibited by viewer navigation paths through the Drill-Down Navigation can also be tracked, profiled, and/or targeted as feedback data to advertisers for fine-tuning Drill-Down Navigation designs.

In FIG. 1C, an example illustrates how a templated VOD display is generated in layers. A Background screen provides a basic color, logo, or graphical theme to the display. A selected Template (display frame) appropriate to the navigation level the intended display resides on is layered on the Background. The Template typically has a frame in which defined areas are reserved for text, display image(s), and navigation links (buttons). Finally, the desired content constituted by associated Text, Image & Buttons is retrieved from the database and layered on the Template. The resulting screen display shows the combined background logo or theme, navigation frame, and text, video images, and buttons.

Referring again to FIG. 1A, a Tracking System 15 of conventional type can be installed at the Cable Head End to aggregate non-personal data on what channels and programs viewers watch. For the Drill Down Navigation method, the Tracking System 15 can include tracking of the navigation paths viewers use to find subjects of interest in a VOD Application. The aggregation of viewer navigation data can indicate what subjects are most popular, whether some subjects are of greater interest to viewers at certain times of day, of certain demographics, or in relation to certain products or services. The VOD Application Server 10 can export the aggregated viewer navigation data to an external Profiling System 16, such as a non-biased or unrelated firm applying profile analysis methods. The results of the Profiling System 16 can be communicated to a Targeting System 17, such as a template design firm or content production company, to fine-tune the presentation of the templated VOD content consistent with viewer preferences or interests. The feedback from the Targeting System can be supplied as feedback to the VOD Application Server to modify the Content/Template Database 11.

Another application for the templated VOD content delivery system can be developed to support video advertisements which link national to local market ad campaigns in "drill-down" fashion. Advertisers, both national and local, can pay for placement of their video advertisements on the system. When the VOD Application is run, the national ads are displayed as a Gateway to linking to the local market ads. In this manner, national ads can be used to transition viewers from general interest in a product to finding specific information about the product available locally.

The templated VOD content delivery system can also support "traffic building" videos, including music videos, that may not generate direct revenue. Once a video is encoded and registered into the system, the management and distribution of the video is conducted through software systems and automated controls. The User Interface provides the user with the ability to navigate and find desired video content. Selection of a category presents the user with a list of video titles available for playback. Categories and

title lists can be generated using real-time database queries, allowing for database-driven management of content within the User Interface. The User Interface can also support a search interface which allows the user to search the video content database to generate a list of video titles with specific characteristics.

As another aspect of the present invention, a VOD content delivery system may be adapted to offer consumer-generated classified ads on TV. The VOD content delivery system is provided with a Content Management frontend to receive consumer input and convert it to video display ads maintained in the system database. Referring to FIG. 2A, a system for managing, converting and displaying individual consumer-generated ads on a VOD content delivery system has a Web-based Content Management System 40 for enabling an individual user to upload content from their computer via a web browser to display a consumer-generated video ad on TV. The uploaded content includes meta data for classifying the video ad by title and topical area(s). A Content Screening System 41 is used for screening the content input by the individual user, such as by performing automatic searching for objectionable text, audio, video and/or images and rejecting the content if found objectionable.

A Content Feed System 42 is used to automatically transfer consumer-generated content screened through the Content Screening System 41 to a Content Conversion System 43. This system automatically converts the consumer-generated content supplied by the Content Feed System 42 into video display format compatible with the VOD content delivery system. The converted video ad is indexed by title and classified topical areas according to the meta data supplied by the user, in accordance with the indexing system maintained by the Content Management System. The VOD Content Delivery System 44 operates a Classified Ads VOD Application in which menus for finding classified ads are navigated by viewers, and specific classified ads are delivered through the Digital Cable Television System for display as video ads on the viewer's TV equipment in response to viewer request input by remote control to the Digital Set Top Box 21, as described previously with respect to the operation of the general VOD platform.

Referring to FIG. 2B, the Web-based Content Management System 40 includes a plurality of functional components to allow consumers to create and manage their own classified ads as interactive television content, as well as pay for the distribution of their content within the digital cable television system. A Classified Management Application 50 is used to receive consumer-input content, have it screened (by the Content Screening System 41, not shown), and store it in the Classified Metadata, Image and Video Database 51. Consumer payment for running video ads is handled by the Transaction Processing Component 53. Also included in the Content Management System are an Account Management Component 55 and Account & Permissions Database 56 for management of user accounts for use of the web-based TV Classified Ads system. A Bulletin Board Ads application may be operated in parallel with the TV Classified Ads application. A Bulletin Board Management Application 54 and Database 57 enable the creation and management of consumer-generated content relating to public announcements and other items of general interest for groups, organizations or topics. The preferred VOD Content Delivery System uses templated VOD content, and a Template Library 58 is used to store templates for both the Classified Ads and Bulletin Board Ads applications.

The Account Management Component controls the access by persons to the web-based Content Management System. The Account Management Component identifies persons accessing the system for the first time and allows these persons to register and create an account by providing an account name, password, credit card information and other information required for the payment of fees. The Account Management Component controls the access by registered users to their accounts and manages the privileges and security associated to all accounts. Persons may create accounts for the creation and management of Classified Ads. Accounts capable of accessing the Bulletin Board Management Application may also be assigned by a system administrator in the Account Management Component. Any account capable of accessing the Bulletin Board application can then create and manage bulletin board ads for the assigned bulletin boards.

The Classified Content Management System enables users to upload text, audio, video, and/or image files for classified ads in industry-standard file formats and have it converted into video display ads compatible with the VOD Content Delivery System. Classified ads are searched on the viewer's TV equipment by menus and lists indexed by title and topical areas corresponding to the metadata associated with the classified ads content. Selection of a listed item results in the display of a TV display ad containing uploaded text, images, video and/or audio. Users pay listing fees to the operator of the system for maintaining and displaying the classified ads on the digital cable television system.

Significant features of the Classified Ads Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) uploading digital images of the item to the Content Management System; (c) uploading digital video of the item to the Content Management System; (d) uploading digital audio regarding the item to the Content Management System; (e) automated size and resolution processing of digital images uploaded to the system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided content; (j) ability to save classified content in persistent memory or storage for subsequent modification; (k) ability to mark classified content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when a classified content item is to become accessible by users of the interactive television system and the data and time when a classified content item is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that a specific content item is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created classified content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific consumer-generated content by users of the interactive television system; and (p) ability to calculate fees for classified content and submit payment of the fees using the Transaction Processing system.

As noted in (i) above, the Classified Content Management System allows the user to view the content they have composed using the templates. The templates are designed specifically for use on interactive television systems and the

user is able to view on the web-interface their content as composed for presentation on television. As noted in (j) above, the Classified Content Management System allows the persistent storage of classified content; although the user is composing interactive television pages using a template system, the content is persistently stored as individual elements to simplify changes by the user and to allow the conversion of the content to different formats as required by different interactive television systems.

The Bulletin Board Content Management System provides the users of the web-based Content Management System with content creation and content management tools for the creation and maintenance of consumer-generated content related to announcements and other informational items of general interest. Bulletin Board content is displayed on the interactive television system as dedicated interactive television screens (bulletin boards), where approved groups, organizations or topics are each assigned a bulletin board for the display of their information. Bulletin Board content is displayed as list items organized within a bulletin board; selection of a list item results in the display of an interactive television screen containing or providing access to the descriptive data, text, images, video and audio regarding the item.

An alternative implementation of a Bulletin Board can display the content as scrolling text, where the user scrolls through the text, or the text scrolls automatically. Bulletin Board accounts will pay fees determined by the operator of the system for the distribution of the bulletin board content on the interactive television system for display on the digital cable television system. Significant features of the Bulletin Board Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) upload digital images to the content management; (c) upload digital video to the content management system; (d) upload digital audio to the content management system; (e) automated size and resolution processing of digital images uploaded to the system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided bulletin board content; (j) ability to save bulletin board content in persistent memory or storage for subsequent modification; (k) ability to mark bulletin board content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when specific bulletin board content is to become accessible by users of the interactive television system and the data and time when specific bulletin board content is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that specific bulletin board content is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created bulletin board content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific bulletin board content by users of the interactive television system; and (p) ability to calculate fees for bulletin board content and submit payment of the fees in conjunction with the Transaction Processing component.

The Transaction Processing component allows users of the Classified Content Management System and Bulletin Board Content Management System to determine and pay

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for any fees resulting from their use of these systems. The Transaction Processing component will allow users to pay for fees using credit cards or other supported payment methods. Significant features of the Transaction Processing component include: (a) ability to maintain business rules for use by the Transaction Processing system to determine fees based on user type and content type; (b) ability to maintain business rules for one or more payment methods for use by the Transaction Processing system in handling the settlement of fees; (c) ability to maintain business rules for user account and payment settlement conditions such as delinquency and lack-of-credit for use by the Transaction Processing system in determining user account privileges and content status; and, (d) ability to process payment of fees in real-time for payment methods that support real-time settlement.

Referring to FIG. 2C, the Content Screening System (41) is comprised of a Text Screening Application 60 which searches for objectionable words or phrases, an Image Screening Application 61 which searches for objectionable graphic images, a Video Screening Application 62 which searches for objectionable images or audio words or phrases in video segments, and an Audio Screening Application 63 which searches for objectionable words or phrases in audio segments. The Content Screening System can be used for both Classified Ads content and Bulletin Board content. Content that has been screened by the Content Screening System is then transferred to the aforementioned Classified Ads Database 51 or the Bulletin Board Content Database 57. The system also has component 64 for Editorial and Customer Service Functions for Classified Ads, and component 65 similarly for Bulletin Board content. These can each include an Email Function to send confirmations of input, reasons for rejection of posting, suggested corrections, further processing, and posting of content to consumers using the system.

Significant features of the Content Screening System include: (a) ability to maintain a library of objectionable or illegal words and phrases for use in the screening of text; (b) ability to perform automated analysis of user content text using the text library as an input and alert system administration personnel to the use of objectionable or illegal content and the use of unknown and suspect words or phrases; (c) ability to maintain a library of objectionable or illegal image elements for use in the screening of images; (d) ability to perform automated image recognition analysis against user content images using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (e) ability to maintain a library of objectionable or illegal image elements for use in the screening of video; (f) ability to perform automated image recognition analysis against user content video using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (g) ability to maintain a library of objectionable or illegal audio elements for use in the screening of audio; (h) ability to perform automated audio analysis against user content audio using the library of audio elements as an input and alert system administration personnel to the use of objectionable or illegal content; and (i) ability to save screened content in persistent memory or storage for subsequent processing. Content Screening is automatically performed with the Content Management System 40 during the user process of submitting and/or creating consumer-generated content or may be performed as a process subsequent to the creation of content by the user.

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Referring to FIG. 2D, the Content Feed System 42 and the Content Conversion System 43 provide for the transfer of user content from the Content Screening System and conversion to video content format compatible with the VOD Content Delivery System 44. The Content Feed System 42 has a Content Selection/Date Filtering Application which selects consumer-generated content uploaded to the system that is within the dates contracted for posting and display of the content as Classified Ads or on Bulletin Boards. Content within the active date range is transferred to the Active Classified Ads Database 71A or the Active Bulletin Board Database 71B.

The Content Conversion System receives consumer-generated content in industry-standard formats or created in viewable format (HTML) on the web-based input system and converts the content into formats compatible with the VOD Content Delivery System and for display on viewers' televisions. The Content Conversion System 43 has an Image Conversion Application 72 which converts consumer-uploaded image files (in industry-standard formats such as JPEG, GIF, TIFF, BMP, PDF, PPT, etc.) into VOD content format, a Video Conversion Application 73 which converts consumer-uploaded video files into VOD content format, and an Audio Conversion Application 74 which converts consumer-uploaded audio files into VOD content format. Content converted to VOD content format is stored in the Active Converted Classified Ads Database 75A or the Active Converted Bulletin Board Database 75B. The content is subject to a further Production Push Function 76A, 76B and stored in the Production Classified Ads Database 77A or the Production Bulletin Board Database 77B, if any presentation formatting, date stamping, template framing, or other system editing is required by the system.

Significant features of the Content Feed System include: (a) ability to select user content for submission to the Content Conversion System through the testing of appropriate parameters including the date and time information contained in the user content; (b) ability to appropriately package the elements of the user content to permit the efficient transfer of these content elements to the Content Conversion System through an Application Program Interface or other interface; (c) ability to create, maintain and execute a schedule for when the Content Feed System will execute on an automatic basis for the automatic transfer of consumer-generated content to the Content Conversion System; and, (d) ability to execute the functions of the Content Feed System on a manual basis in the presence or absence of a schedule. The Content Feed System may be able to package and distribute content to single or multiple Content Conversion Systems.

Significant features of the Content Conversion system include: (a) ability to receive content packages delivered by the Content Feed System through an Application Program Interface or other interface; (b) ability to process the elements of consumer-generated content into data, text, graphic, video and audio elements that are compatible with the interactive television system and maintain the content presentation created by the user on the web-based Content Management System; (c) ability to save reformatted content in persistent memory or storage for subsequent distribution and use by the interactive television system; and, (d) ability to inform the interactive television system that consumer-generated content is available for distribution and use. The Content Conversion System may be added as a component system of the VOD Content Delivery System, or it may be implemented as a wholly separate system that connects to the VOD Content Delivery System through an Application

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Program Interface or other interface. When implemented as a system that is separate from the VOD Content Delivery System, it is possible to support multiple, different interactive television systems by either (a) incorporating multiple formatting requirements into a single instance of the Content Conversion System or (b) creating multiple Content Conversion Systems, each supporting the formatting requirements for a specific interactive television system. Either implementation allows for a single instance of consumer-generated content that is created and maintained using the web-based Content Management System to be distributed and displayed on multiple, different interactive television systems with different formatting requirements.

The VOD Content Delivery System **44**, as described previously, provides for the distribution of screened, converted, properly formatted consumer-generated content to viewers' televisions, typically through the use of digital set-top boxes connected to a digital cable television system capable of supporting real-time two-way data transfer between the set-top box and the Cable Head End. Significant features of the VOD Content Delivery System include: (a) ability to receive properly formatted content from the Content Conversion System; (b) ability to distribute said content over a digital cable television system and display this content on television as an interactive television presentation; (c) ability to receive user commands generated by an infrared remote control device, keyboard or other device; (d) ability to respond to the user commands by displaying appropriate content or executing desired functionality; and, (e) ability to generate and collect data regarding the user sessions and the viewing data regarding consumer-generated content on the interactive television system and make this data accessible to the Tracking System. The VOD Content Delivery System can employ templated VOD content delivery, as described previously with respect to FIG. 1A, enabling use of the Drill Down Navigation method in which viewers can navigate visually through classified ad hierarchical categories to specific titles or content.

The VOD Content Delivery System for the Classified Ads application can also employ the Tracking System **15** for the collection and consolidation of viewing data generated by the interactive television system and the generation of reports against this viewing data. For example, the Tracking System can track the number of viewer requests for viewing that a classified ad received in a given period and calculate billing charges accordingly. The Tracking System can make this information available to users of the Content Management System as well as to system administrative personnel performing general analysis of interactive television services and associated content. Significant features of the Tracking System include: (a) ability to access and process the data generated by the Classified Ads application; (b) ability to form summaries of the viewing data against desired parameters; (c) ability to save data, summaries and reports in persistent memory or storage for subsequent modification or access; (d) ability to make data, summaries and reports accessible by users of the web-based Content Management System, restricting the data accessible by any specific user to data regarding the content created by that user account on the Content Management System; and, (e) ability to make data, summaries and reports accessible by to system administration personnel.

As another aspect of the present invention, implementation of a VOD content delivery system can be made on any digital television system that supports real-time two-way data transfer and interactivity between the digital Set Top Box and application servers and VOD servers located at

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headends or other service points within the television system network. An alternative digital television system of increasing importance in the marketplace is Internet Protocol Television (IPTV). IPTV is a system for delivering video content, both broadcast and Video on Demand, to digital set top boxes and other devices. IPTV and digital cable both transmit digital video in packetized data streams within closed, proprietary broadband systems; however, IPTV uses Internet Protocol (IP) to structure, route and deliver the digital video packets within an IPTV system.

Referring to FIG. 3, an alternative implementation for a VOD content delivery system is illustrated for an IPTV system. The components of the VOD content delivery system listed in the figure are similar to those in FIG. 1A. However, FIG. 3 illustrates the terminology and network architecture of an IPTV system as used for the purposes of this invention. The VOD Application Server **10**, Content/Template Database **11**, Video Server **12** and Tracking System **15** are located in the IPTV Service Node; the IPTV Service Node is equivalent to the Cable Headend in FIG. 1A. Systems external to the IPTV Service Node such as the Application Data Center **30**, Profiling System **16**, Targeting System **17** and Video Content Distribution Network **14** connect to their associated VOD Content Delivery System components housed within the IPTV Service Node in manners similar to those used in a digital cable system implementation. IPTV systems can use multiple network technologies within their closed, proprietary broadband network. Core and Access Network **78** are high-bandwidth networks connecting IPTV Service Nodes in order to support the central transport of video streams. The Core and Access Network **78** feed the Customer Access Network **79**, which supports the physical network connection into the customer premise and connects to the IPTV Digital Set Top Box **80**. The combination of the Core and Access Network **78** and Customer Access Network **79** is the functional equivalent of the Digital Cable Television System **13** in FIG. 1A.

In operation, the VOD Content Delivery System implementation for IPTV is identical to the digital cable implementation. The VOD Application Server **10** operates a VOD application for the IPTV system, for example, "automobile infomercials on demand". The viewer sends a request for selected VOD content, such as to see an infomercial on a specific model type made by a specific auto manufacturer, by actuating a viewer request signal by a key press on the viewer's remote control unit transmitting an IR signal to the IPTV Digital Set Top Box **80** that is sent on as IP-encapsulated message through the IPTV System to the VOD Application Server **10** at the IPTV Service Node. In response to the signal, the VOD Application Server **10** determines the VOD content being requested and retrieves the infomercial ad display template from the Template Database **11** and video content segment from the Video Server **12**, in order to generate the corresponding templated VOD content. In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server **10** retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a "drill-down navigation" method to find specific end content of interest.

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Similarly, all previously mentioned adaptations of the VOD Content Delivery System implementation for digital cable, such as Classified Ads and Bulletin Boards, are supported identically on IPTV implementations.

Wide Ranging Content Uploadable Via Internet to Digital TV VOD Platform

In the foregoing description, the uploading, management, conversion, and display of content uploaded from the Internet for viewing on a VOD platform was described for an embodiment in which consumer-generated classified ads and other TV-displayable information of interest are uploaded via Internet for conversion and display as video programs on cable TV infrastructure. Even further, the principles of the invention are applicable to a wide range of other content uploadable on the Internet and to other types of digital television service providers such as DSL telephone lines, local area broadband networks, and wireless broadband networks. In the following description, another exemplary embodiment of the present invention is described with respect to uploading wide ranging content via Internet for viewing on the VOD platforms of any type of digital TV system.

Referring to FIG. 4, informational/media content from any Content Source can be uploaded via Internet to a Digital TV System for placement on its Video-on-Demand (VOD) Platform to be viewable as TV programs on Viewers' TVs by selection from an Electronic Program Guide (EPG) transmitted via the viewer's Set Top Box for display on the TV. Content is uploaded by an author or publisher to the Web-based Content Management System 40, which processes the content through a Content Feed System 42 and Content Conversion System 43 (from standard digital data formats to TV video format) to the VOD Content Delivery System 44 where it is stored in its associated Video Content Database 45 for retrieval upon viewer request. Uploaded TV programs are offered to viewers by listing them on the EPG, and upon viewer selection via the Set Top Box, are delivered via the Digital TV System infrastructure.

For VOD platforms, an EPG is typically presented to viewers as a program guide displayed on the TV for finding a title of interest associated with that particular VOD channel. The EPG display can be pulled up using the commonly used "Guide" button on remote control units, or an "EPG" button that indicates that the set-top box supports more advanced guide navigation functions. The EPG display typically starts with a top level menu offering a vertical list or horizontal bar of broad categories of content, e.g., Movies, Documentaries, TV Shows, News, Sports, Community Events, Self-Help, Infomercials, etc. For example, the viewer can cursor through categories on a horizontal bar by using the Left/Right arrow keys on the remote control unit, and select a category by placing the cursor highlight on the desired category title, such as "News", and clicking the "Select" key on the remote control unit. The EPG then brings up the next display of subcategories available in the selected category. For the "News" category, it might display subcategories of "ABC", "NBC", "CBS", "CNN", "MSNBC", "Anywhere Reports", etc. Upon selecting "Anywhere Reports", the EPG would then display the next level of subcategories down, e.g., "San Francisco", "Los Angeles", "Denver", "Dallas", "Chicago", "Boston", "New York", "D.C.", etc. This sequence continues until the viewer selects a program title or exits the EPG. In order to give the viewer a navigation experience similar to using a browser to visit pages on a website or series of websites, the EPG can be programmed to allow the viewer to cursor back to a higher category level or go forward to a lower level previ-

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ously traversed by pressing the Up/Down arrow keys. Similarly, after the viewer has viewed a selected TV program, pressing the "EPG" button again returns the viewer to the position of the title in the EPG. The EPG display can also provide visual traces or "breadcrumbs" of the categories and subcategories traversed by the viewer to that title by displaying the hierarchical addressing sequence on a top or lower border of the TV display.

The EPGs for VOD "channels" thus use program guide displays on the TV which are in a structured hierarchy to allow the viewer to navigate to a program title of interest. Upon selecting the title, a data return associated with that title is sent from the set-top box as a request to the VOD platform for the program associated with that title. The EPG database of the VOD platform maintains an index linking the program titles to the addresses in the VOD Content Database 45 where the respective programs are stored. Upon receiving a request of a program title from the set-top box, the VOD Content Delivery System 40 retrieves the corresponding video content from the Database and transmits it on its broadband network to the set-top box that sent the request. Advanced VOD platforms also have VCR or DVR-like functions that enable a viewer to Pause, Play, Rewind, Fast Forward, and Stop a program using the TV remote control unit.

Hierarchical Addressing of TV Programs

In the present invention, the EPG hierarchical display structure used in VOD platforms is used as a form of "hierarchical addressing" that uniquely allows viewer navigation to and identifies a program title of interest. This EPG hierarchical addressing scheme can be represented as a string of category term, subcategory term(s), and title that together (as a string delimited by standard character delimiters) uniquely identifying each program offered on the EPG channel. In FIG. 4, for example, the EPG address for a program title on the VOD channel might be represented with a TV (EPG) address as:

TV:/News/Anywhere Reporting/New York/Financial/"Live from NYSE by Jim Cramer"

The uploaded content may be of any digital media type and come from any web-based source. For the TV viewing environment, content accompanied by video images and voice and/or sound is preferred for presentation as entertainment or recreational viewing. Such content can be generated ubiquitously from any PC computer by an author or publisher using a video or webcam for images and a microphone for audio. The media streams may be edited and composed with a multimedia program, such as Microsoft Windows™ Media, Apple Quicktime™, Macromedia Flash™, and others. Similarly, the content may already be composed as a video program and posted on a website as a downloadable video program via a web link or publishing point address. For example, websites like YouTube.com, Brightcove.com, and others have become very popular by offering thousands of self-published video programs by nonprofessional authors and publishers for viewing on the Internet. Such video content may also be uploaded from digital media devices such as iPod™ Video sold by Apple Computer Corp. on which it has already been downloaded from a website. It may also be uploaded from digital phone devices such as iPhone™ sold by Apple which has an on-board camera for video and microphone for sound.

The term "Internet" is intended to include any wide area digital network or network of networks connecting a universe of users via a common or industry-standard (TCP/IP) protocol. Users having a connection to the Internet commonly connect browsers on their computing terminal or

device to websites that provide informational content via web servers. The Internet can also be connected to other networks using different data handling protocols through a gateway or system interface, such as wireless gateways using the industry-standard Wireless Application Protocol (WAP) to connect Internet websites to wireless data networks. Wireless data networks are being deployed worldwide and allow users anywhere to connect to the Internet via wireless data devices.

The Digital TV System in FIG. 4 can be of any type that supports video-on-demand programming to TV viewers on any suitable type of VOD platform (infrastructure). While it may be a Cable TV system as described previously, it may be any type of digital TV system providing TV services via a high-speed data connection to the viewer's TV. For example, it may be an Internet Protocol TV (IPTV) system of the type connected to home subscribers via phone DSL lines, cable or other high-speed, high-bitrate connections. As previously described with respect to FIG. 3, the IPTV system can support video-on-demand TV services to TV viewers on a scale that cannot be supported by Internet video websites. The Internet is not an infinitely scalable resource, and placing a burden such as high-bitrate, high definition, full-screen video streams in any significant volume can overwhelm the Internet in its present form. IPTV transmits video programs in digital format using the IP protocol, but instead of transmitting over common Internet connections, it transmits over high-speed, high-bitrate connections that are envisioned to be implemented ultimately as all-fiber optical "last mile" connection to the home.

In the present invention, content can be uploaded via the Internet to the Web-based Content Management System 40 of a Digital TV System and automatically converted, navigated and selected/displayed on the VOD platform for viewing on home TV. Automatic navigation, selection and display is enabled by adopting the same EPG hierarchical addressing scheme used for the VOD program guide as the addressing metadata identifying content uploaded on the Internet. When an author or publisher connects to the Web-based Content Management System 40, the author or publisher selects the category term, subcategory term(s) and title by which it is desired to find the program title in the TV EPG display hierarchy. Thus, when the above-mentioned example of a video program is uploaded, the hierarchical address for that program would be selected as:

TV/News/Anywhere Reporting/New York/Financial/"Live from NYSE by Jim Cramer".

This hierarchical addressing metadata is associated with or tagged to the content when uploaded to the Web-based Content Management System 40, and is carried over into the VOD/EPG navigation scheme displayed on the TV. Hierarchical addressing is already well familiar to computer users through the hierarchical ordering of files stored in layers of folders on computers. By carrying over the hierarchical address metadata into EPG navigation, the invention allows the content to be automatically listed in the EPG under a common addressing scheme to enable viewers to find any program of interest. The hierarchical addressing string of terms also resembles URL addressing sequences commonly used on the Internet. Thus, Internet users can readily become familiar with finding TV programs on the VOD EPG guide due to its resemblance to finding web resources with a URL. Indeed, in the convergence of Internet and TV worlds, a TV EPG hierarchical address may be thought of as a URL for a TV program.

The uploaded content is converted, as previously described, into a standard TV digital format, and a "local

instance" thereof is stored at an assigned VID address in the Video Content Database 45 of the VOD platform. The VID address is linked to the metadata title for the video content listed in the EPG. The hierarchical address for the title is automatically carried over into the EPG navigation scheme, and can be found by a viewer cursoring (with the TV remote control) through the EPG following the same hierarchical addressing sequence. Upon the subscriber selecting, via a remote control unit in communication with the set-top box, the title of the video content from the hierarchically-arranged categories and subcategories in the EPG, a return request for the selected title is transmitted to the VOD platform for retrieving the video content at the linked VID address in the Video Content Database. The requested video program is then retrieved and transmitted by the VOD Content Delivery System 44 through the digital TV lines to the subscriber's set-top box for display on the subscriber's TV.

By the method of the present invention, the title and hierarchical address assigned by the publisher of the program is automatically carried over into the TV electronic program guide (EPG) following the same hierarchical addressing indicated by the publisher of the content. The publisher selects categories and subcategories for categorizing the title of the video content from the EPG categorization scheme presented by the digital television service provider for the listing of titles on one of its VOD channels. With this method, vast numbers of content publishers anywhere on the Internet can upload their programs with a minimum of conversion and handling steps by the digital television service provider. Home TV viewers can then easily use the EPG hierarchical navigation scheme to find something of interest for viewing.

As more and more video content becomes offered on VOD platforms of digital TV systems, it may be desirable to enable more robust functionality for the EPG including the capability to bookmark TV programs and share TV bookmarks with other TV subscribers or even friends and contacts on the Internet. Bookmarking can be implemented by using the hierarchical address as the unique address for identifying an item of interest on the VOD platform. Such a system is disclosed in a concurrent continuation-in-part U.S. patent application Ser. No. 11/685,188 by the same inventor, filed on Mar. 12, 2007, entitled "Converting, Navigating and Displaying Video Content Uploaded from the Internet to a Digital TV Video-on-Demand Platform", which is incorporated herein by reference.

The extension of TV VOD programming to citizen publishing, and the convergence of Internet searching with sharing of TV program bookmarks, can also stimulate diverse new content publishing sources and supporting hardware and equipment in the converged Internet-TV universe. For example, TV EPGs can be exported via Internet to Internet-connected digital devices, including digital phones, media players, game consoles, Video iPods™, PDAs, etc., and conversely, TV bookmarks selected from EPGs on the Internet can be imported back into the viewer's "MyEPG" or "MyVideoLibrary" for their TV through the Web-based Content Management System. This would enable people to freely select, save, bookmark, and share TV programs with friends and contacts between their TV viewing environment and their daily mobile or away-from-home environments. Internet-connected DVRs, such as those sold by TiVo, or virtual DVRs offered by the digital TV service provider can also connect Internet searching and bookmark sharing to the viewer's "MyEPG" or "MyVideoLibrary" for VOD program viewing.

Going from Internet to the TV, a PC user can share TV bookmarks received by email on the PC with other contacts and friends whose email addresses are maintained in an address book or contact list on that person's email client. The PC user can also send TV bookmarks found in searching a website for program listings offered by the Digital TV System to their own Viewer Bookmarks file(s) or to those of other TV subscribers. The PC user simply logs on via Internet to the Web-based Content Management Server **40** for the Digital TV System and selects an option to send the TV bookmark(s) to the Viewer's Bookmark file(s) for that person's subscriber name/user, or to the name/user of any other TV subscriber.

#### Dynamic Adjustment of EPG Displays for Faster Viewer Navigation

As more and more video content becomes offered on VOD platforms of digital TV systems, it would be desirable to dynamically adjust the EPG displays listing the categories, subcategories, and titles of TV programs in a manner to minimize the number of keypresses on the remote control unit needed to navigate to a program title of interest. In the present invention, the viewer's past history of EPG navigation and TV program selection are tracked, and the ordering of categories, subcategories and/or titles displayed in the EPG is dynamically reordered in accordance with higher relevance to the viewer. In the following description, a preferred implementation of dynamic adjustment of the EPG tracks the frequency of the viewer's selection of categories, subcategories, and titles, and reorders them in the viewer's EPG (MyEPG) for faster navigation is described.

Referring to FIG. 5, a diagram illustrates in Step **501** a typical display of an EPG for a VOD channel. The top level display of the EPG has a vertical listing (or horizontal bar) showing the names of broad categories for the TV programs offered for viewing on demand. In this example, the vertical listing lists: "Movies"; "Documentaries", "Short Subjects", "News", "Sports", "Public Interest", and "Infomercials" in top to bottom order. In this embodiment, a button for "MyEPG" is also offered to link the viewer to a viewer-individualized EPG.

Upon pressing the "MyEPG" button in Step **501**, the viewer is taken to Step **502** in which the first LogIn display shows a list of previously registered viewers in the household subscribed to the digital TV service. For example, in this household, two viewers "Diaz-Perez, A" and "Diaz-Perez, M" were previously registered. If the viewer selects one of the previously registered names, the display also prompts the viewer for entry of their selected personal identification number (PIN). If the current viewer wishes to register as a new viewer in the household, the LogIn display offers the option of entering a new viewer name and PIN using the remote control unit for character spelling (numeric pad style). Upon selecting or entering the viewer name and PIN, the viewer then presses the button for "Go To MyEPG".

The viewer is then taken to Step **503**, where the top level display of MyEPG shows a vertical listing of names of the broad categories for the TV programs offered for viewing on demand. However, in this example, the vertical listing has been reordered to list from top to bottom those categories in order of frequency with which the viewer has clicked on them in the past, e.g., "Public Interest", "Documentaries", "Short Subjects", "Sports", "News", "Movies", and "Infomercials". Therefore, this viewer who has previously visited the "Public Interest" category most frequently now only needs to click the "Select" button to link to the next level of MyEPG display. The viewer who has previously visited the

"Documentaries" category second most frequently only needs to cursor down (arrow key) one click to highlight the "Documentaries" category then press the "Select" button, and so on. In a similar manner, subcategories listed on the next level of MyEPG display are reordered in order of frequency of this individual viewer's past navigation clicks, and so on to lower subcategories and finally to individual titles of TV programs.

If the VOD channel has too numerous category names or titles to list on any given MyEPG display level, it can also reorder the display by listing, say, the top 7 category names or titles as a suitable number of displayed choices, and all other category names or titles of lower relevance out-of-sight on a following page accessed by clicking the "More" button.

In this manner navigating through many options at each level of EPG display can be made faster for the individual viewer in MyEPG. Once the viewer identifies him/herself to the VOD system by logging in to MyEPG, the system tracks all EPG navigation clicks as being those of that viewer until the TV session ends or another viewer in the same household logs in. As a basic tracking method, the system tracks which categories and subcategories the viewer clicks on most frequently, then reorders the EPG nav listing/bar to display those listed first.

As a preferred form of implementation of MyEPG reordering, the system can employ the hierarchical, templated approach to "drill down" navigation to VOD items of interest as previously described with respect to advertising in FIGS. 1B and 1C. To illustrate, in FIG. 6, the drill-down navigation in MyEPG can proceed from a top category level display in **601**, to selection of a next subcategory level display **602**, to selection of a further subcategory level display **603**, and finally the titles display **604**, all of which have the category and subcategory names and titles reordered in highest priority for those most frequently clicked by the viewer. Instead of cursoring through the list, the options may also be listed indexed to numbers which can be selected by one keypress of the corresponding number on the remote control unit.

Referring to FIG. 7A, an overall system architecture for a MyEPG system includes the MyEPG Server **702** located at or connected to a digital television system Head End. The MyEPG Server **702** processes any requests from the viewer for MyEPG information to be displayed within the MyEPG display templates. In the first illustration in FIG. 7A, the viewer has logged into the MyEPG system, and the MyEPG application needs the proper content categories to populate the MyEPG Main Menu **701**. A request for this information is sent to the MyEPG Server **702** upon performing the login. To process the request, the MyEPG Server **702** receives information regarding the viewer from the User Profile database **704**. The User Profile information can include programming preferences stated by the viewer, demographic information (such as age, gender, income, geographic region, etc.) and other descriptive information that may be useful to the relevance algorithms of the MyEPG Server **702**. The MyEPG Server **702** also obtains information regarding the actual viewing habits of the viewer from the Usage History database **703**. The Usage History database **703** is updated whenever the viewer accesses programming content, providing a detailed log of the viewer's consumption of programming content. The MyEPG Server **702** uses the information from Usage History **703** and User Profile **704** to form a relevance schema by which to rank and order the programming data provided by the EPG Data/Metadata database **705**. This newly reordered EPG data is packaged



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into a MyEPG Query Result Set **706** and delivered to the MyEPG application for display to the viewer, using the MyEPG templates. In the MyEPG Main Menu **701**, the viewer is presented with a list of categories in order of relevance to the viewer as determined by their viewing habits.

Continuing in FIG. 7A, the viewer has reviewed the programming categories displayed in the MyEPG Main Menu **701** and selects the category "SPORTS". Upon selecting "SPORTS", the Usage History database **703** is updated to reflect this MyEPG selection by the viewer. Similar to the processing for the MyEPG Main Menu **701**, a request is generated to the MyEPG Server **702** for a listing of the programming subcategories for "SPORTS". Using the information from the Usage History database **703** and the User Profile **704**, the MyEPG Server **702** selects and sorts the subcategories for the Sports category, packages this newly ordered EPG data in the MyEPG Query Result Set **706** and delivers it to the MyEPG application for display as the MyEPG Sports Category Menu **707**.

Continuing in FIG. 7B, after reviewing the programming subcategories displayed in the MyEPG Sports Menu **707**, the viewer continues traversing the hierarchy of the MyEPG data and selects the subcategory "HORSE RACING". Upon selecting "HORSE RACING", the Usage History database **703** is updated to reflect this MyEPG selection by the viewer. Similar to the process described in FIG. 7A, a request is generated to the MyEPG Server **702** for a listing of the programming sub-sub-categories for "HORSE RACING". Using the information from the Usage History database **703** and the User Profile **704**, the MyEPG Server **702** selects and sorts the sub-sub-categories for the Horseracing subcategory, packages this newly ordered EPG data in the MyEPG Query Result Set **706** and delivers it to the MyEPG application for display as the Horseracing subcategory **708**.

Continuing in FIG. 7B, after reviewing the programming sub-sub-categories displayed in the MyEPG Horseracing Menu **708**, the viewer continues traversing the hierarchy of the MyEPG data and selects the sub-sub-category "GOLDEN GATE FIELDS". Upon selecting "GOLDEN GATE FIELDS", the Usage History database **703** is updated to reflect this MyEPG selection by the viewer. Similarly to the process described for FIG. 7A and FIG. 7B, a request is generated to the MyEPG Server **702** for a listing of the program titles for "GOLDEN GATE FIELDS" sub-subcategory. Using the information from the Usage History database **703** and the User Profile **704**, the MyEPG Server **702** selects and sorts the program titles for the Golden Gate Fields sub-subcategory, packages this newly ordered EPG data in the MyEPG Query Result Set **706** and delivers it to the MyEPG application for display as the MyEPG Golden Gate Fields sub-sub-category **709**.

To arrive at the MyEPG Golden Gate Fields Menu **709**, the viewer has traversed four levels of hierarchy within the MyEPG system, using a single processing system to handle the queries and responses required by the MyEPG application as the viewer navigates through the MyEPG templates. The hierarchical, templated nature of the MyEPG system supports this uniform methodology for handling any number of levels in content hierarchy.

Continuing in FIG. 7C, after reviewing the program titles displayed in the MyEPG Golden Gate Fields Menu **709**, the viewer returns to the MyEPG Main Menu by selecting the "MyEPG" button on the display. Upon selecting "MyEPG", the Usage History database **703** is updated to reflect this selection by the viewer. Similarly to the process described in FIG. 7A, a request is generated to the MyEPG Server **702** for

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a listing of the Main Menu categories. Using the information from the Usage History database **703** and the User Profile **704**, the MyEPG Server **702** selects and sorts the Main Menu categories, packages this newly ordered EPG data in the MyEPG Query Result Set **706** and delivers it to the MyEPG application for display as the MyEPG Main Menu **710**. The MyEPG Main Menu **710** differs from the MyEPG Main Menu **701** in shown in FIG. 7A as a result of new usage information that affects the determination of relevance. The viewer's activity now indicates that the SPORTS category is now the mostly frequently accessed category and generates the most selections of actual programming content. In FIG. 7A, the MyEPG Main Menu **701** had "NEWS" as the first-ranked category; in the FIG. 7C, the MyEPG Server **702** has determined that "SPORTS" is the top-ranked category, and has reordered the MyEPG Main Menu listings accordingly. Similarly, if the viewer selects "SPORTS", the Sports subpage will display "HORSE RACING" at the top of the MyEPG listing, and "GOLDEN GATE FIELDS" at the top of the Horseracing subpage. However, the Golden Gate Fields subpage will list the then current days' races because those titles will have changed with current race video content uploading. To conclude the MyEPG session, the viewer selects "EXIT MyEPG" from the MyEPG Main Menu **710** and exits the MyEPG application.

As an extension to the MyEPG reordering process, the system can also employ viewer preference algorithms and determine a likely reordering of the category names and titles based on more sophisticated criteria, such as time-of-day, weekday or weekend, or even preferences based on past selections of TV program titles. For example, if the viewer frequently views episodes of the TV show "Columbo", the system can reorder titles displayed at the TV program selection level to list any newly available "Columbo" episodes at the top of the MyEPG display, or if very frequently watched, it can automatically create a category or subcategory as the next higher navigation level to list all the available "Columbo" titles.

Referring to FIG. 8A, the creation by the MyEPG system of a new category based on past selections of TV program titles is illustrated. When the MyEPG system detects a usage pattern that could warrant the creation of a new category, the MyEPG system informs the viewer of the recommendation. The MyEPG Main Menu **801** displays the "NEW CATEGORY SUGGESTIONS" menu item. When the viewer selects the "NEW CATEGORY SUGGESTIONS" menu item, they are taken to the MyEPG New Category Suggestions menu **802**. This menu lists the content categories that the MyEPG system has determined could further individualize the viewer's MyEPG display and simplify the viewer's ability to access content of significant interest. In this example, the MyEPG New Category Suggestions menu **802** lists the television series "Columbo" as a new category recommendation based on viewing habits. Continuing to FIG. 8B, the viewer selects "Columbo" and is taken to the MyEPG New Category Confirmation menu **803**. This menu allows the viewer to accept or reject the new category recommendation. By accepting the recommendation, the MyEPG system will insert the new category in the appropriate location within the viewer's MyEPG display, as determined by relevance and hierarchy. The MyEPG Main Menu **804** shows the Main Menu with the new "COLUMBO" category, ranked second in terms of relevance to the viewer. Accessing the "COLUMBO" category would take the viewer to a listing of "Columbo" episodes that are available for viewing.



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As the viewer navigation traverses through the hierarchically-arranged categories and subcategories down to individual titles for individual items of video content, the hierarchical arrangement of categories and subcategories is indicative of a unique hierarchical address for the item of video content. As previously described with respect to FIG. 4, the hierarchical address may be represented as a string of category and subcategory terms and the title delimited by standard delimiters, and used to implement a bookmarking function by which viewers can share TV bookmarks with other TV subscribers or even friends and contacts on the Internet.

The reordering of frequently selected options can also be applied to any VOD navigation schema where the viewer's experience could be enhanced by reordering the presentation layer data within the hierarchical model to suit the preferences of the viewer. For example, dynamic reordering could be applied to a navigation tree for on-demand TV programs for a specific product area of interest, such as "Autos", to order the listed product infomercials or ad information displays based on the viewer's past history of preferences.

It is understood that many modifications and variations may be devised given the above description of the principles of the invention. It is intended that all such modifications and variations be considered as within the spirit and scope of this invention, as defined in the following claims.

What is claimed is:

1. A method for dynamic adjustment of an individualized electronic program guide where the adjustment is based at least in part on individual viewer consumption of video-on-demand programs on a subscriber TV system to enable navigating by an individual viewer in a TV subscriber household that may have a plurality of viewers to video-on-demand programs offered on a video-on-demand platform of a digital TV services provider which is at least part of a digital TV services provider system, the method comprising:

- (a) maintaining, at the digital TV services provider system, an electronic program guide database comprising electronic program guide data, and a usage history database comprising a log of selection data corresponding to the viewer's consumption of the video-on-demand programs using the video-on-demand platform;
- (b) establishing, at the digital TV services provider system, viewer-individualized electronic program guide data for each of a plurality of individual viewers to enable the generation of viewer-individualized electronic program guides for each of said plurality of individual viewers at the subscriber TV system for use in accessing the video-on-demand programs, and allowing each respective individual viewer to access a display of their respective viewer-individualized electronic program guide through a Log-In step by which the respective individual viewer operating the subscriber TV system can be associated with their respective viewer-individualized electronic program guide;
- (c) in one or more previous sessions while said respective individual viewer is logged onto their respective viewer-individualized electronic program guide in order to access the video-on-demand programs on the subscriber TV system, tracking, at the digital TV services provider system, said respective individual viewer's consumption of the video-on-demand programs listed in their respective viewer-individualized electronic program guide and saving the selection data in the usage history database;

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(d) determining, at the digital TV services provider system, an order of relevance of a plurality of category names for said respective individual viewer selection of video-on-demand programs from their respective viewer-individualized electronic program guide based at least in part on said respective individual viewer's selection data from said one or more previous sessions as stored in the usage history database and reflecting said respective individual viewer's preferences for selection of video-on-demand programs from their respective viewer-individualized electronic program guide, and based at least in part on the electronic program guide data in the electronic program guide database; and

(e) at the start of each new session when said respective individual viewer logs onto their respective viewer-individualized electronic program guide in order to access video-on-demand programs on the subscriber TV system, reordering a current display listing of the category names for categories of video-on-demand programs on said respective individual viewer's viewer-individualized electronic program guide based at least in part on said determined order of relevance.

2. The method of claim 1, wherein said determined order of relevance is based at least in part on said respective individual viewer's selection data from said one or more previous sessions comprises a category-based order of relevance based on category name selection.

3. The method of claim 1, wherein said determined order of relevance is determined based at least in part on a parameter of viewer selection from the group consisting of: time-of-day, weekday or weekend, and preference indicated by past selections of program titles.

4. The method of claim 1, wherein the current display listing of category names is reordered by listing a predetermined number of category names of higher relevance on the display listing, and maintaining all other category names of lower relevance out-of-sight on a following display.

5. The method of claim 4, wherein the other category names of lower relevance are accessed by activating a "More" button on the display listing.

6. The method of claim 1, wherein video content offered for viewing on the video-on-demand platform is accessed by navigation through hierarchically-arranged categories and subcategories down to individual titles for individual items of the video content.

7. The method of claim 6, wherein the hierarchical arrangement of categories and subcategories down to a respective individual title for a respective individual item of the video content is indicative of a unique hierarchical address for the respective individual item of the video content.

8. The method of claim 7, wherein the unique hierarchical address comprises a string of category and subcategory terms and the respective individual title delimited by standard delimiters.

9. The method of claim 1, wherein the reordering of category names is provided upon transition of said respective individual viewer from a generalized electronic program guide for all viewers on the video-on-demand platform, which is generated based upon the electronic program guide data in the electronic program guide database, to a viewer-individualized electronic program guide.

10. The method of claim 1, wherein the Log-In step enables said respective individual viewer to register their name, and in a subsequent Log-In step said respective

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individual viewer only needs to select their name from a list of previously registered viewers.

11. The method of claim 9, wherein a top level display of the viewer-individualized electronic program guide displays a reordered listing of category names of top level categories for the TV programs offered for viewing on demand.

12. The method of claim 11, wherein each subsequent level display of the viewer-individualized electronic program guide displays a reordered listing of subcategory names of subcategories for the video-on-demand programs offered for viewing on demand.

13. The method of claim 9, wherein, upon access by said respective individual viewer to the viewer-individualized electronic program guide, the categories and subcategories on which the respective individual viewer clicks are tracked until the respective individual viewer logs off or the TV viewing session is ended, and the tracking of said respective individual viewer's clicks is added to said respective individual viewer's past history.

14. The method of claim 9, wherein upon access by said respective individual viewer to the viewer-individualized electronic program guide, the categories and subcategories for video content on which the individual viewer clicks are tracked and used to create automatically a new category for TV programs of the type most frequently clicked on by said respective individual viewer.

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15. The method of claim 1, further comprising automatically generating an additional category or subcategory based on the log of said respective individual viewer's consumption of the video-on-demand programs maintained in the usage history database.

16. The method of claim 1, further comprising providing said individual viewer with a recommendation for one or more additional categories to be added to the viewer-individualized electronic program guide based on the log of the respective individual viewer's consumption of the video-on-demand programs.

17. The method of claim 1, further comprising maintaining a user profile database in addition to the usage history database and the electronic program guide database, wherein the step of determining, at the digital TV services provider system, an order of relevance of the category names for said respective individual viewer selection of video-on-demand programs from their respective viewer-individualized electronic program guide is further based at least in part on said individual viewer's user profile maintained in the user profile database.

18. The method of claim 17, wherein the user profile database comprises at least one of programming preferences stated by said respective individual viewer or demographic information for said respective individual viewer.

\* \* \* \* \*



US009648388B2

(12) **United States Patent**  
**Perez**

(10) **Patent No.:** **US 9,648,388 B2**

(45) **Date of Patent:** **\*May 9, 2017**

(54) **VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICES SUBSCRIBERS**

(71) Applicant: **Broadband iTV, Inc.**, Honolulu, HI (US)

(72) Inventor: **Milton Diaz Perez**, Tiburon, CA (US)

(73) Assignee: **Broadband iTV, Inc.**, Honolulu, HI (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **15/253,321**

(22) Filed: **Aug. 31, 2016**

(65) **Prior Publication Data**

US 2016/0373825 A1 Dec. 22, 2016

**Related U.S. Application Data**

(60) Continuation of application No. 14/978,953, filed on Dec. 22, 2015, now Pat. No. 9,491,511, which is a (Continued)

(51) **Int. Cl.**  
**H04N 7/18** (2006.01)  
**H04N 7/173** (2011.01)  
(Continued)

(52) **U.S. Cl.**  
CPC . **H04N 21/47202** (2013.01); **H04N 21/26225** (2013.01); **H04N 21/42204** (2013.01);  
(Continued)

(58) **Field of Classification Search**

USPC ..... 725/74-104  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,706,121 A 11/1987 Young  
5,479,268 A 12/1995 Young et al.  
(Continued)

**FOREIGN PATENT DOCUMENTS**

EP 1 164 796 A1 12/2001  
EP 1 361 759 A1 11/2003  
(Continued)

**OTHER PUBLICATIONS**

Notice of Entry of Judgment Without Opinion for Case No. 2016-1082 of the United States Court of Appeals for the Federal Circuit dated Sep. 26, 2016.

(Continued)

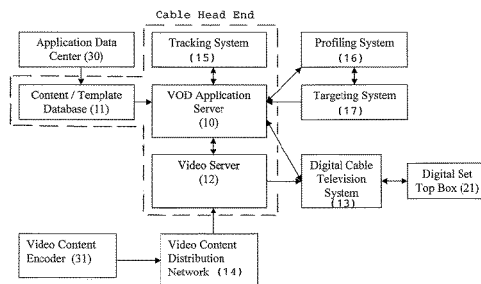
*Primary Examiner* — Mushfikh Alam

(74) *Attorney, Agent, or Firm* — Amster, Rothstein & Ebenstein LLP

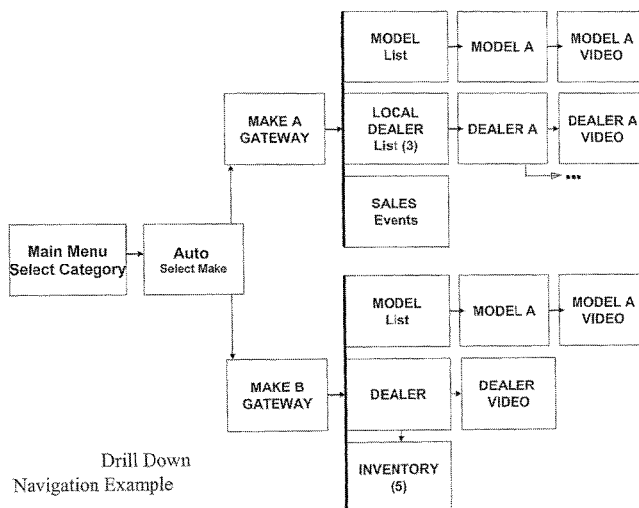
(57) **ABSTRACT**

A video-on-demand (VOD) content delivery system has a VOD Application Server which manages a database of templates for presentation of video content elements of different selected types categorized in hierarchical order. A web-based Content Management System receives content uploaded online in file formats with metadata for title and topical area, and automatically converts it into video data format compatible with the VOD content delivery system indexed by title and topical area. A User Interface for the system delivers listings data to the viewer's TV indexed by title and topical area specified by the uploaded metadata.

**19 Claims, 7 Drawing Sheets**



VOD Content Delivery System, Overall Architecture



**Related U.S. Application Data**

continuation of application No. 14/706,721, filed on May 7, 2015, now Pat. No. 9,338,511, which is a continuation of application No. 12/852,663, filed on Aug. 9, 2010, now Pat. No. 9,078,016, which is a division of application No. 11/952,552, filed on Dec. 7, 2007, now Pat. No. 7,774,819, which is a division of application No. 10/909,192, filed on Jul. 30, 2004, now Pat. No. 7,590,997.

**(51) Int. Cl.**

**H04N 21/472** (2011.01)  
**H04N 21/262** (2011.01)  
**H04N 21/431** (2011.01)  
**H04N 21/61** (2011.01)  
**H04N 21/84** (2011.01)  
**H04N 21/482** (2011.01)  
**H04N 21/422** (2011.01)

**(52) U.S. Cl.**

CPC ..... **H04N 21/4312** (2013.01); **H04N 21/482**  
(2013.01); **H04N 21/6125** (2013.01); **H04N**  
**21/84** (2013.01)

**(56)****References Cited****U.S. PATENT DOCUMENTS**

5,550,735 A 8/1996 Slade et al.  
5,589,892 A 12/1996 Knee et al.  
5,594,936 A 1/1997 Rebec et al.  
5,648,824 A 7/1997 Dunn et al.  
5,686,954 A 11/1997 Yoshinobu et al.  
5,721,827 A 2/1998 Logan et al.  
5,734,853 A 3/1998 Hendricks et al.  
5,758,258 A 5/1998 Shoff et al.  
5,759,101 A 6/1998 Von Kohorn  
5,790,176 A 8/1998 Craig  
5,798,785 A 8/1998 Hendricks et al.  
5,812,123 A 9/1998 Rowe et al.  
5,813,014 A 9/1998 Gustman  
5,826,102 A 10/1998 Escobar  
5,832,499 A 11/1998 Gustman  
5,850,218 A 12/1998 LaJoie et al.  
5,859,898 A 1/1999 Checco  
5,867,821 A 2/1999 Ballantyne  
5,892,536 A 4/1999 Logan et al.  
5,914,746 A 6/1999 Matthews  
5,926,230 A 7/1999 Nijima et al.  
5,931,901 A 8/1999 Wolfe  
5,956,716 A 9/1999 Kenner et al.  
5,991,801 A 11/1999 Rebec et al.  
6,005,561 A 12/1999 Hawkins et al.  
6,008,803 A 12/1999 Rowe et al.  
6,025,837 A 2/2000 Matthews et al.  
6,038,591 A 3/2000 Wolfe  
6,049,823 A 4/2000 Hwang  
6,088,455 A 7/2000 Logan et al.  
6,092,080 A 7/2000 Gustman  
6,100,883 A 8/2000 Hoarty  
6,118,442 A 9/2000 Tanigawa  
6,148,081 A 11/2000 Szymanski et al.  
6,161,142 A 12/2000 Wolfe  
6,177,931 B1 1/2001 Alexander et al.  
6,205,582 B1 3/2001 Hoarty  
6,237,146 B1 5/2001 Richards  
6,269,275 B1 7/2001 Slade  
6,289,346 B1 9/2001 Milewski et al.  
6,305,016 B1 10/2001 Marshall et al.  
6,317,885 B1 11/2001 Fries  
6,357,042 B2 3/2002 Srinivasan  
6,446,083 B1 9/2002 Leight et al.  
6,476,826 B1 11/2002 Plotkin et al.  
6,539,548 B1 3/2003 Hendricks et al.  
6,546,393 B1 4/2003 Khan

6,564,380 B1 5/2003 Murphy  
6,738,978 B1 5/2004 Hendricks  
6,754,904 B1 \* 6/2004 Cooper ..... G06Q 10/10  
348/E7.071  
6,774,926 B1 8/2004 Ellis et al.  
6,804,825 B1 10/2004 White et al.  
6,834,110 B1 12/2004 Marconcini et al.  
6,845,396 B1 1/2005 Kanojia et al.  
6,898,762 B2 5/2005 Ellis et al.  
6,931,451 B1 8/2005 Logan et al.  
6,990,677 B1 1/2006 Pietraszak et al.  
7,028,327 B1 4/2006 Dougherty et al.  
7,055,166 B1 5/2006 Logan et al.  
7,058,223 B2 6/2006 Cox  
7,065,709 B2 6/2006 Ellis  
7,076,734 B2 7/2006 Wolff et al.  
7,089,309 B2 8/2006 Ramaley et al.  
7,100,185 B2 8/2006 Bennington et al.  
7,103,905 B2 \* 9/2006 Novak ..... H04N 7/17318  
348/E7.071  
7,103,906 B1 9/2006 Katz et al.  
7,120,925 B2 10/2006 D'Souza et al.  
7,155,674 B2 12/2006 Breen et al.  
7,200,575 B2 4/2007 Hans et al.  
7,213,005 B2 5/2007 Mourad et al.  
7,222,163 B1 \* 5/2007 Girouard ..... G11B 27/28  
375/E7.025  
7,225,455 B2 5/2007 Bennington et al.  
7,269,854 B2 9/2007 Simmons et al.  
7,277,870 B2 10/2007 Mourad et al.  
7,305,691 B2 12/2007 Cristofalo  
7,308,413 B1 12/2007 Tota et al.  
7,337,462 B2 2/2008 Dudkiewicz et al.  
7,367,043 B2 \* 4/2008 Dudkiewicz ..... G06F 17/30017  
348/E5.006  
7,386,512 B1 6/2008 Allibhoy et al.  
7,392,532 B2 6/2008 White et al.  
7,426,558 B1 9/2008 Allibhoy et al.  
7,444,402 B2 \* 10/2008 Rennels ..... H04H 20/31  
709/219  
7,471,834 B2 12/2008 Sull et al.  
7,493,643 B2 2/2009 Ellis  
7,516,472 B2 4/2009 Danker et al.  
7,548,565 B2 6/2009 Sull et al.  
7,590,997 B2 9/2009 Diaz Perez  
7,594,245 B2 9/2009 Sezan et al.  
7,606,883 B1 10/2009 Allibhoy et al.  
7,624,337 B2 11/2009 Sull et al.  
7,631,336 B2 12/2009 Diaz Perez  
7,644,429 B2 1/2010 Bayassi et al.  
7,650,621 B2 1/2010 Thomas et al.  
7,690,020 B2 3/2010 Lebar  
7,720,707 B1 5/2010 Mowry  
7,761,899 B2 7/2010 Buehl et al.  
7,774,819 B2 8/2010 Perez  
7,801,838 B2 9/2010 Colbath et al.  
7,801,910 B2 9/2010 Houh et al.  
7,835,920 B2 11/2010 Snyder et al.  
7,908,626 B2 3/2011 Williamson et al.  
7,917,933 B2 \* 3/2011 Thomas ..... G06F 3/0481  
725/87  
7,921,448 B2 4/2011 Fickle et al.  
7,925,973 B2 4/2011 Allaire et al.  
7,926,079 B2 4/2011 Lebar  
7,945,929 B2 5/2011 Knudson et al.  
7,962,414 B1 6/2011 Allibhoy et al.  
7,974,962 B2 7/2011 Krakirian et al.  
7,987,492 B2 7/2011 Liwerant et al.  
8,006,263 B2 8/2011 Ellis et al.  
8,010,988 B2 8/2011 Cox  
8,020,187 B2 9/2011 Cox  
8,042,132 B2 \* 10/2011 Carney ..... G06Q 30/02  
709/217  
8,090,605 B2 1/2012 Tota et al.  
8,112,776 B2 2/2012 Schein et al.  
8,151,290 B1 4/2012 Ujihara  
8,191,098 B2 5/2012 Cooper et al.  
8,205,237 B2 6/2012 Cox  
8,214,254 B1 7/2012 Mowry

(56)

## References Cited

## U.S. PATENT DOCUMENTS

8,219,446 B1	7/2012	Mowry	2004/0049788 A1	3/2004	Mori et al.
8,249,924 B1	8/2012	Mowry	2004/0073919 A1	4/2004	Gutta et al.
8,340,994 B2	12/2012	Tota et al.	2004/0078825 A1	4/2004	Murphy
8,346,605 B2	1/2013	Krikorian et al.	2004/0103120 A1*	5/2004	Fickle ..... G06Q 10/10
8,365,230 B2	1/2013	Chane et al.	2004/0117844 A1	6/2004	Karaoguz et al.
8,434,118 B2*	4/2013	Gonder ..... H04L 29/06027 725/87	2004/0133918 A1	7/2004	Danker
8,464,302 B1	6/2013	Liwerant et al.	2004/0136698 A1	7/2004	Mock
8,473,868 B1	6/2013	Kauffman	2004/0148626 A1	7/2004	Sakao et al.
8,479,246 B2	7/2013	Hudson et al.	2004/0158855 A1	8/2004	Gu et al.
8,644,354 B2	2/2014	George et al.	2004/0172419 A1	9/2004	Morris et al.
8,707,354 B1	4/2014	Moreau et al.	2004/0205816 A1	10/2004	Barrett
8,843,978 B2	9/2014	Hardin	2004/0268250 A1	12/2004	Danker
8,997,136 B2	3/2015	Brooks et al.	2004/0268413 A1	12/2004	Reid et al.
9,055,325 B2	6/2015	Gaydou et al.	2005/0044577 A1	2/2005	Jerding
9,066,118 B2	6/2015	Diaz Perez	2005/0049933 A1	3/2005	Upendran et al.
9,078,016 B2	7/2015	Diaz Perez	2005/0050218 A1	3/2005	Sheldon
9,106,959 B2	8/2015	Diaz Perez	2005/0081237 A1	4/2005	Chen
9,113,228 B2	8/2015	Diaz Perez	2005/0097622 A1	5/2005	Zigmond et al.
9,232,275 B2	1/2016	Perez	2005/0097623 A1	5/2005	Tecot
9,292,866 B2	3/2016	Allaire et al.	2005/0138560 A1	6/2005	Lee et al.
2001/0018771 A1	8/2001	Walker et al.	2005/0149987 A1	7/2005	Boccon-Gibod et al.
2001/0033736 A1	10/2001	Yap	2005/0154679 A1	7/2005	Bielak
2001/0049625 A1	12/2001	Mowry	2005/0160458 A1	7/2005	Baumgartner
2001/0052132 A1	12/2001	Fryer	2005/0160465 A1	7/2005	Walker
2002/0056104 A1	5/2002	Burnhouse et al.	2005/0166230 A1	7/2005	Gaydou et al.
2002/0059621 A1*	5/2002	Thomas ..... G06F 3/0481 725/87	2005/0188415 A1	8/2005	Riley
2002/0066106 A1	5/2002	Kanojia et al.	2005/0193015 A1	9/2005	Logston
2002/0069218 A1	6/2002	Sull et al.	2005/0203918 A1	9/2005	Holbrook
2002/0078456 A1	6/2002	Hudson	2005/0210524 A1	9/2005	Dolph
2002/0083451 A1	6/2002	Gill	2005/0229209 A1	10/2005	Hildebolt et al.
2002/0087661 A1	7/2002	Matichuk et al.	2005/0235318 A1	10/2005	Grauch et al.
2002/0088009 A1	7/2002	Dudkiewicz et al.	2005/0235319 A1	10/2005	Carpenter et al.
2002/0088010 A1*	7/2002	Dudkiewicz ..... G06F 17/30017 725/138	2005/0239546 A1	10/2005	Hedrick
2002/0092019 A1	7/2002	Marcus	2005/0240961 A1	10/2005	Jerding et al.
2002/0104099 A1*	8/2002	Novak ..... H04N 7/17318 725/136	2005/0246752 A1	11/2005	Liwerant et al.
2002/0120925 A1	8/2002	Logan	2005/0283800 A1	12/2005	Ellis et al.
2002/0138843 A1	9/2002	Samaan et al.	2005/0289151 A1	12/2005	Burke
2002/0138844 A1	9/2002	Otenasek	2006/0004914 A1	1/2006	Kelly et al.
2002/0147975 A1	10/2002	Seo	2006/0015925 A1	1/2006	Logan
2002/0152224 A1	10/2002	Roth et al.	2006/0029093 A1	2/2006	Van Rossum
2002/0152318 A1	10/2002	Menon et al.	2006/0085830 A1	4/2006	Bruck et al.
2002/0163532 A1*	11/2002	Thomas ..... G06F 17/30814 715/723	2006/0123455 A1	6/2006	Pai
2002/0163535 A1	11/2002	Thomas et al.	2006/0155850 A1	7/2006	Ma et al.
2002/0174430 A1	11/2002	Ellis et al.	2006/0174260 A1	8/2006	Gutta
2002/0184634 A1	12/2002	Cooper	2006/0267995 A1	11/2006	Radloff et al.
2002/0184635 A1	12/2002	Istvan	2007/0016530 A1	1/2007	Stasi et al.
2002/0194194 A1*	12/2002	Fenton ..... G06F 17/3089	2007/0038567 A1	2/2007	Allaire et al.
2003/0009542 A1	1/2003	Kasal et al.	2007/0157221 A1	7/2007	Ou et al.
2003/0018971 A1	1/2003	McKenna	2007/0157249 A1	7/2007	Cordray et al.
2003/0037010 A1*	2/2003	Schmelzer ..... G06F 17/30026 705/67	2007/0198532 A1*	8/2007	Krikorian ..... G06Q 30/0273 705/14.69
2003/0055893 A1	3/2003	Sato et al.	2007/0214482 A1	9/2007	Nguyen
2003/0084126 A1*	5/2003	Kumar ..... G06Q 30/02 709/219	2007/0245399 A1	10/2007	Espelien
2003/0084449 A1	5/2003	Chane et al.	2007/0250864 A1	10/2007	Diaz Perez
2003/0093790 A1	5/2003	Logan et al.	2008/0022298 A1	1/2008	Cavicchia
2003/0101451 A1	5/2003	Bentolila et al.	2008/0072260 A1	3/2008	Rosin et al.
2003/0149975 A1	8/2003	Eldering et al.	2008/0127257 A1	5/2008	Kvache
2003/0154128 A1	8/2003	Liga	2008/0141325 A1	6/2008	Ludvig et al.
2003/0154475 A1	8/2003	Rodriguez et al.	2008/0148317 A1	6/2008	Opaluch
2003/0167449 A1	9/2003	Warren	2008/0163292 A1	7/2008	Stallworth
2003/0167471 A1	9/2003	Roth et al.	2008/0163330 A1	7/2008	Sparrell
2003/0191816 A1	10/2003	Landress	2008/0189749 A1	8/2008	White et al.
2003/0204856 A1	10/2003	Buxton	2008/0222687 A1	9/2008	Edry
2003/0208756 A1	11/2003	Macrae et al.	2009/0158334 A1	6/2009	Rodriguez et al.
2003/0226150 A1	12/2003	Berberet	2010/0138863 A1	6/2010	Diaz Perez
2003/0234819 A1	12/2003	Daly	2010/0153999 A1	6/2010	Yates
2004/0015989 A1	1/2004	Kaizu et al.	2010/0211975 A1	8/2010	Boyer et al.
2004/0015998 A1	1/2004	Bokor	2010/0319040 A1	12/2010	Diaz Perez
			2010/0325655 A1	12/2010	Perez
			2011/0030012 A1	2/2011	Diaz Perez
			2011/0030013 A1	2/2011	Diaz Perez
			2011/0166918 A1	7/2011	Allaire et al.
			2011/0191163 A1	8/2011	Allaire et al.
			2013/0125158 A1	5/2013	Brown
			2013/0254804 A1	9/2013	Diaz Perez
			2013/0254809 A1	9/2013	Diaz Perez
			2013/0254814 A1	9/2013	Diaz Perez
			2015/0128192 A1	5/2015	Diaz Perez
			2015/0237403 A1	8/2015	Perez

(56)

**References Cited****U.S. PATENT DOCUMENTS**

2015/0245099	A1	8/2015	Perez
2015/0264440	A1	9/2015	Perez
2015/0281792	A1	10/2015	Gaydou et al.
2015/0358649	A1	12/2015	Perez
2015/0358682	A1	12/2015	Perez
2015/0358683	A1	12/2015	Perez

**FOREIGN PATENT DOCUMENTS**

IE	WO0138960	5/2001
JP	07-284035	10/1995
JP	11-150692	6/1999
JP	03-116121	4/2003
WO	9406084 A1	3/1994
WO	99/10822 A1	3/1999
WO	99/41684 A1	8/1999
WO	9950778 A1	10/1999
WO	01/10124 A1	2/2001
WO	01/10127 A1	2/2001
WO	WO0122688	3/2001
WO	0208948 A2	1/2002
WO	03/052572 A1	6/2003
WO	WO03052572	6/2003
WO	WO03069457	8/2003
WO	WO 2007/021974 A2	2/2007

**OTHER PUBLICATIONS**

Judgment, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc., Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, Nos. 2016-1082, 2016-1083 (CAFC Sep. 26, 2016) (2 pgs).

Affidavit of Milton Diaz Perez Under 37 C.F.R. 132, Jan. 20, 2012, submitted in U.S. Appl. No. 11/768,895.

International Search Report, dated Mar. 6, 2006, in PCT International Application US2005/027376, of Broadband iTV, Inc.

International Search Report, dated Sep. 15, 2009, in PCT International Application US2008/003341, of Broadband iTV, Inc.

International Search Report, dated Nov. 28, 2008, in PCT International Application US2008/007980, of Broadband iTV, Inc.

The Industry Standard, "Web Entertainment Gets Personal", Jan. 10, 2000, [www.thestandard.com](http://www.thestandard.com).

Affidavit of Milton Diaz Perez Under C.F.R. 132, Mar. 9, 2009, submitted in U.S. Appl. No. 10/909,192, filed Jul. 3, 2004.

Affidavit of Milton Diaz Perez, Ex. A, Wikipedia, "Cable Television in the United States", history, last modified Jan. 17, 2009, pp. 1-7, [http://en.wikipedia.org/wiki/Cable\\_Television\\_in\\_the\\_United\\_States](http://en.wikipedia.org/wiki/Cable_Television_in_the_United_States).

Affidavit of Milton Diaz Perez, Ex. B, Wikipedia, "Internet Television", history, last modified Feb. 5, 2009, pp. 1-4, [http://en.wikipedia.org/wiki/Internet\\_TV](http://en.wikipedia.org/wiki/Internet_TV).

Affidavit of Milton Diaz Perez, Ex. C, Wikipedia, "Content Delivery Network", history, last modified Feb. 10, 2009, pp. 1-6, [http://en.wikipedia.org/wiki/Content\\_Delivery\\_Network](http://en.wikipedia.org/wiki/Content_Delivery_Network).

Affidavit of Milton Diaz Perez, Ex. D, Wikipedia, "Walled Garden (technology)", history, last modified Feb. 3, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/Walled\\_Garden\\_\(technology\)](http://en.wikipedia.org/wiki/Walled_Garden_(technology)).

Affidavit of Milton Diaz Perez, Ex. E, Wikipedia, "User-generated TV", history, last modified Feb. 10, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/User-generated\\_TV](http://en.wikipedia.org/wiki/User-generated_TV).

Affidavit of Milton Diaz Perez, Ex. E1, Wikipedia, "ZeD", history, last modified Jan. 5, 2009, pp. 1-7, <http://en.wikipedia.org/wiki/Zed>.

Affidavit of Milton Diaz Perez, Ex. E2, Wikipedia, "Current TV", history, last modified Feb. 5, 2009, pp. 1-5, [http://en.wikipedia.org/wiki/Current\\_TV](http://en.wikipedia.org/wiki/Current_TV).

Affidavit of Milton Diaz Perez, Ex. E3, Outloud.TV, tripAtlas, circa 2003, <http://tripAtlas.com/Outloud.tv>.

VOD Metadata—Project Primer, Overview of VOD Content Specification 1.0, 1.1, and 2.0, published by Cable Labs, circa 2002-2007, <http://www.cablelabs.com/projects/metadata/primer>.

XOD Capsule, issue dated Apr. 11, 2006, includes article "Bresnan Taps CMC for VOD", published by Communications, Engineering & Design Magazine, <http://www.cedmagazine.com/newsletter.aspx?id=67468>.

Comcast Media Center, Content Gateway, Content Distribution website, circa 2010, <http://www.comcastmediacenter.com/content-gateway>.

Petition for Inter Partes Review, IPR2014-01222, *Unified Patents, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Petition for Covered Business Method Review, CBM2014-00189, *Hawaiian Telcom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Patent Owner's Preliminary Response, Jan. 2, 2015, CBM2014-00189, *Hawaiian Telcom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Decision Denying Institution of Inter Partes Review, Jan. 5, 2015, IPR2014-01222, *Unified Patents v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

PTAB Decision Denying Institution of Covered Business Method Patent Review, Apr. 1, 2015, CBM2014-00189, *Hawaiian Telcom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Adams, Open Cable Architecture (Cisco Press 2000), Chapter 8-16. ATSC Standard: Program and System Information Protocol for Terrestrial Broadcast and Cable (PSIP) (Dec. 23, 1997).

Attack of the \$500 Killer Network Computers: Time-Warner Cable's Full Service Network, Network Computing (Aug. 19, 2000) Internet Archive, <https://web.archive.org/web/20000819050301/http://www.networkcomputing.com/616/616tw.html>.

CableLabs Video-On-Demand Asset Distribution Interface Specification, Version 1.1 (Sep. 27, 2002).

CableLabs Video-On-Demand Content Specification Version 1.1 (Jan. 7, 2004).

Declaration of Milton Diaz Perez, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Mar. 2, 2015).

Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit A, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit B, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit C, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit D, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit E, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit F, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Fickle et al., U.S. Appl. No. 60/429,966, filed Nov. 27, 2002.

Full Service Network and The Orlando Sentinel add interactive dining guide to GOtv, The Free Library, <http://www.thefreelibrary.com/Full+Service+Network+and+The+Orlando+Sentinel+add+interactive+dining...+a018299720> (published May 20, 1996, last visited Mar. 4, 2015).

Full Service Network(FSN) in Orlando, Florida, Hong Kong University of Science and Technology (May 4, 1997) Internet Archive, <https://web.archive.org/web/19970504203603/http://www.ust.hk/~webiway/content/USA/Trial/fsn.html>.

Full Service Network, Time Warner Cable, <http://m.history.time WarnerCable.com/the-twc-story/era-1990-1995/Story.aspx?s-story=56> (last visited Mar. 4, 2015).

Full Service Network, Wikipedia, [http://en.wikipedia.org/w/index.php?title=Full\\_Service\\_Network&printable=yes](http://en.wikipedia.org/w/index.php?title=Full_Service_Network&printable=yes) (last visited Mar. 4, 2015).

(56)

## References Cited

## OTHER PUBLICATIONS

Tanenbaum, Computer Networks, 4th ed. (Prentice Hall PTR 2003), pp. 1-14.

Time Warner Cable, DRAFT Asset Distribution System ("Catcher's Mitt") Functional Requirements, Version 1.0 (Jan. 26, 2000).

Time Warner Cable, ISA Data Download Delivery, Version 0.5 (Jun. 3, 2004).

Time Warner Cable, Pegasus Interactive Services Architecture, Version 1.4 (Jun. 5, 2003).

Time Warner Cable, The ISA Tutorial, Version 1.0 (Sep. 13, 2003).

Time Warner Cable's Full Service Network connects live to Innoventions, AllBusiness (published Apr. 10, 1996, archived Mar. 25, 2008) Internet Archive, <https://web.archive.org/web/20080325024937/http://www.allbusiness.com/media-telecommunications/telecommunications/7218809-1.html>.

Time Warner introduces world's first full service network in Orlando; Network offers First . . . , AllBusiness (published Dec. 14, 1994, archived May 22, 2009) Internet Archive, <https://web.archive.org/web/20090522134441/http://www.allbusiness.com/media-telecommunications/telecommunications/7087127-1.html>.

Time Warner will close its Full Service Network, Orlando Business Journal, <http://www.bizjournals.com/orlando/stories/1997/04/28/daily7.html> (last visited Mar. 4, 2015).

Time Warner's "Time Machine" for Future Video, The New York Times, <http://www.nytimes.com/.../12/business/time-warner-s-time-machine-for-future-video.html?pagewanted=2&pagewanted=print> (published Dec. 12, 1994, last visited Mar. 4, 2015).

Time Warner Cable, Request For Proposal and Functional Requirements Specification for Video-On-Demand (VOD) Systems, Version 2.0 (Apr. 25, 1997).

Time Warner Cable, Pegasus Movies On Demand Content Specification, Version 1.3 (Sep. 29, 2000).

Time Warner Cable, Pegasus Overall Flow: Movie Delivery, Version 1.0 (Feb. 18, 2004).

Time Warner, Time Warner Cable Launches Quick Clips, <http://www.timewarner.com/newsroom/press-releases/2006/09/28/time-warner-cable-launches-quick-clips> (published Sep. 28, 2006, last visited Jun. 26, 2015).

Time Warner Cable, Photos & Video Go from Digital Cameras to Television with Free, New Time Warner Cable Product, [http://www.timewarnercable.com/en/about-us/press/photos\\_video\\_go\\_from\\_digital\\_cameras\\_to\\_television\\_with\\_freewar.html](http://www.timewarnercable.com/en/about-us/press/photos_video_go_from_digital_cameras_to_television_with_freewar.html) (published Apr. 27, 2007, last visited Jun. 26, 2015).

Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (5 pgs).

Memorandum in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474-1), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (49 pgs).

Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 475), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (12 pgs).

Declaration of Nathan L. Brown (ECF 475-1), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (6 pgs).

Exhibits 1 (ECF 475-2), 4 (ECF 475-5), 5 (ECF 475-6), and 6 (ECF 475-7) to Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat.

No. 7,631,336, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (133 pgs).

Plaintiff's Opposition to Defendants Time Warner Cable, Inc. and Oceanic Time Warner Cable, LLC's Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 561), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (52 pgs).

Plaintiff Broadband iTV, Inc.'s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.'s Concise Statement of Facts (ECF 562), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Declaration of Keith A. Jones (ECF 562-1), Inc.'s Concise Statement of Facts, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Exhibits 1-10 (ECF 562-2-ECF-11), 12 (ECF 562-13), 14 (ECF 562-15), 16-17 (ECF 562-17-562-18), and 19-20 (ECF 562-20-562-21) to Plaintiff Broadband iTV, Inc.'s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.'s Concise Statement of Facts, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (508 pgs).

Order Granting in Part and Denying in Part Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Sep. 29, 2015) (77 pgs).

Judgment, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Oct. 9, 2015) (4 pgs).

Order Granting Defendant Hawaiian Telcom, Inc.'s Motion for Summary Judgment of Invalidity Under 35 U.S.C. § 101, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, No. 14-00169 (D. Haw. Sep. 29, 2015) (43 pgs).

Judgment, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, No. 14-00169 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, No. 14-00169 (D. Haw. Oct. 9, 2015) (4 pgs).

Brief of Amici Curiae Broadband iTV, Inc., Double Rock Corporation, Island Intellectual Property, LLC, Access Control Advantage, Inc., and Fairway Financial U.S., Inc. In Support of Appellants, *Netflix, Inc. v. Rovi Corporation et al.*, No. 2015-1917 (Fed. Cir. Dec. 18, 2015).

Consolidated Brief for Appellant Broadband iTV, Inc., *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 21, 2016).

Amicus Brief of United Inventors Association of the United States of America in Support of Appellant Broadband iTV, Inc. and Reversal, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 27, 2016).

Amicus Brief by Tranxition, Inc., *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 28, 2016).

EPO Communication for European Application No. 08726793.6, dated May 30, 2016.

EPO Communication for European Application No. 08768802.4, dated May 30, 2016.

VDO expands Webcasting possibilities, Broadcasting & Cable, Nov. 11, 1996.

Jose Alvear, "Web Developer.com Guide to Streaming Multimedia", Chapters 9 and 11, 1998.

Business Wire, "Ivex Announces ViewOps Internet Video Service; Allows Business Managers to View and Manage Operations Online," May 2, 2000.

\* cited by examiner

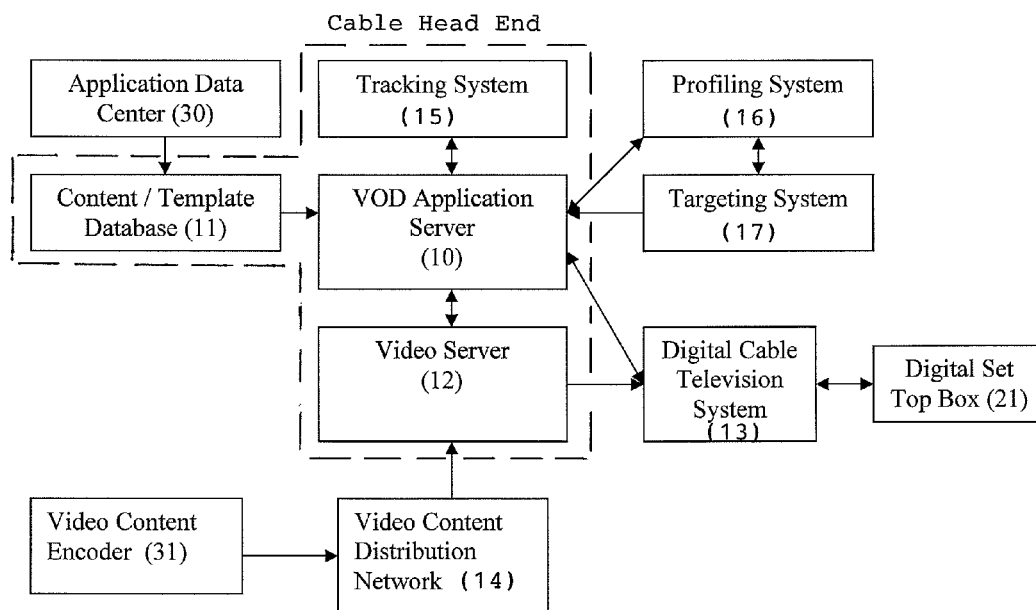


Figure 1A: VOD Content Delivery System, Overall Architecture



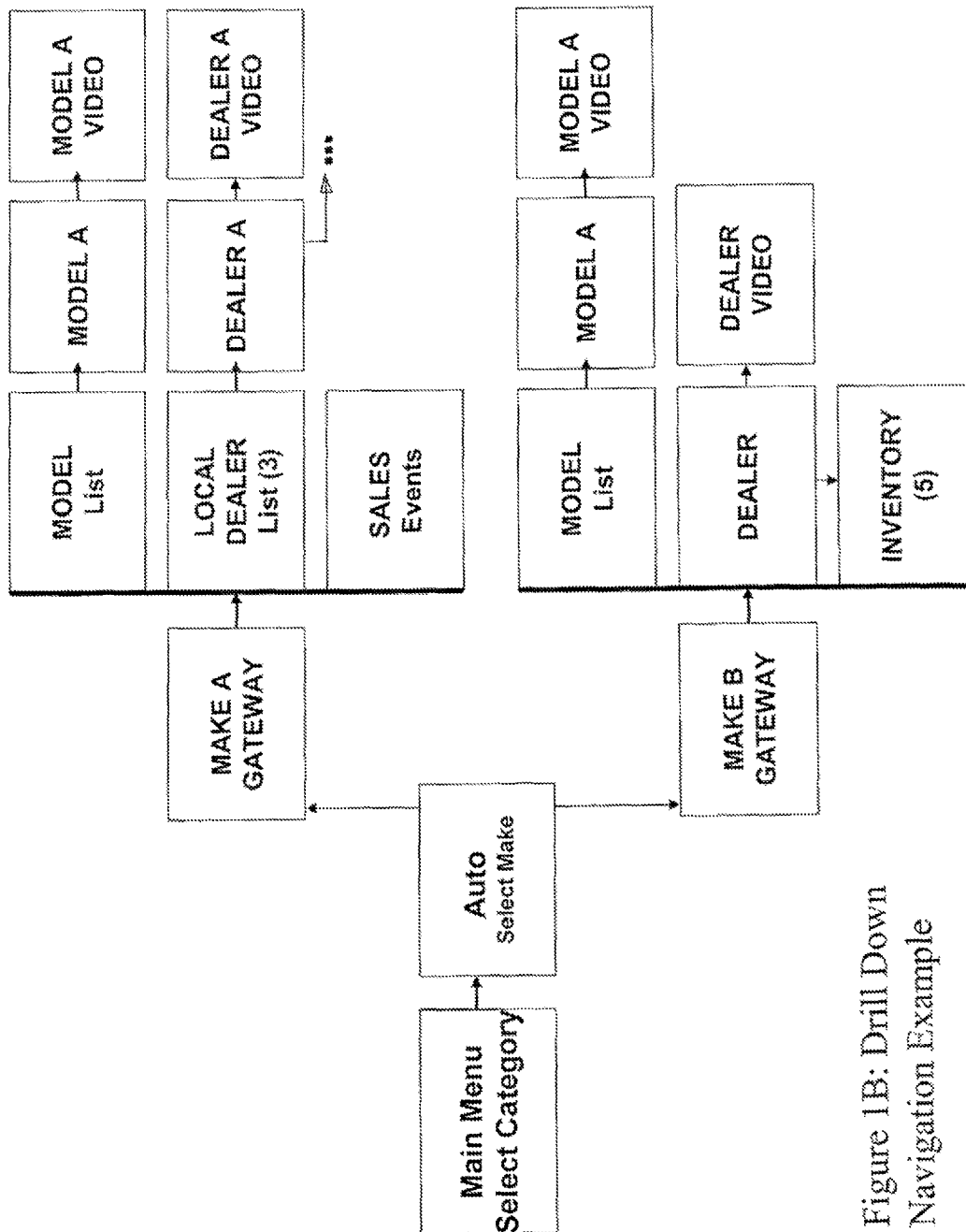
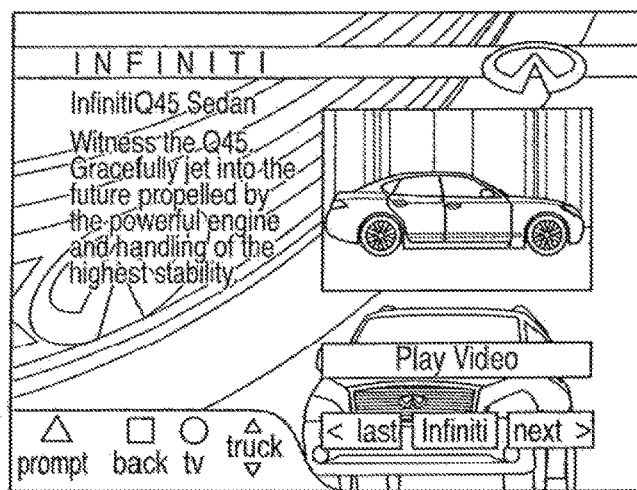
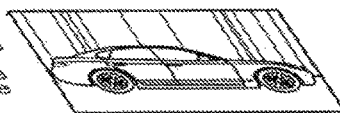


Figure 1B: Drill Down  
Navigation Example



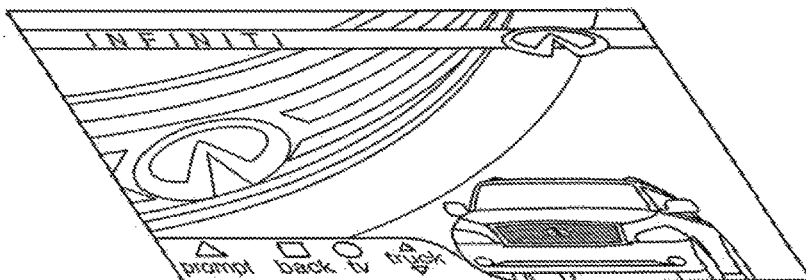
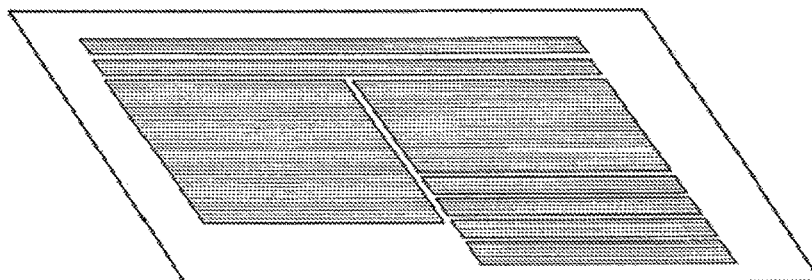
Infiniti Q45 Sedan  
Witness the Q45.  
Gracefully jet into the future propelled by the powerful engine and handling of the highest stability.



Play Video

< last Infiniti next >

FIG. 1C



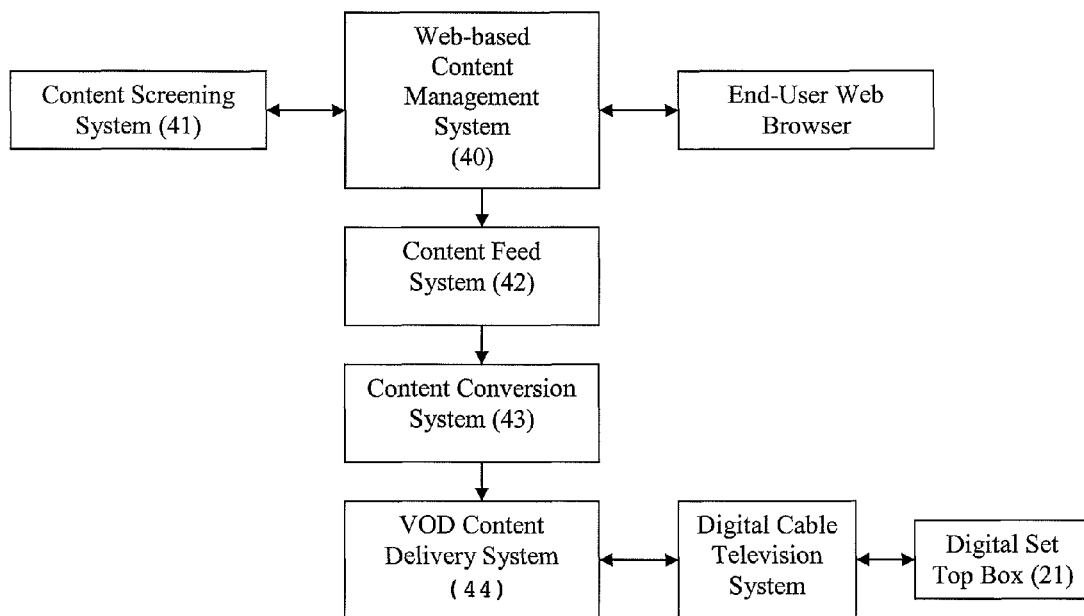


Figure 2A: Classified Ad System, Overall Architecture

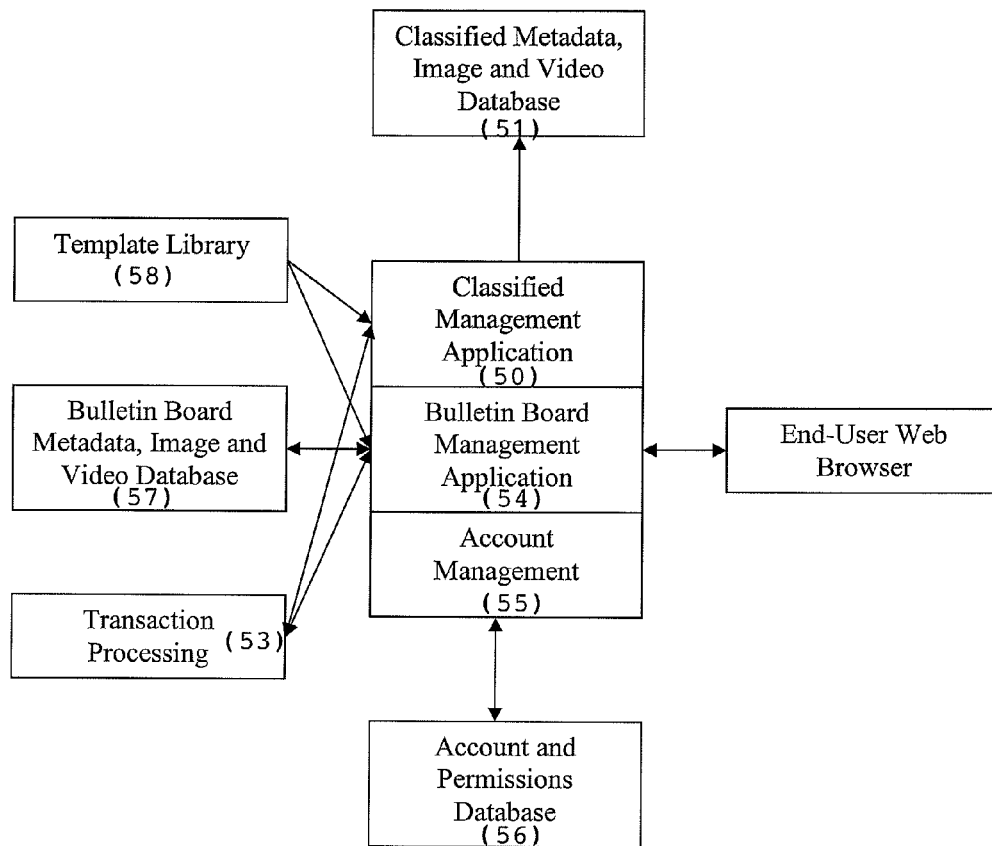


Figure 2B: Web-based Content Management System

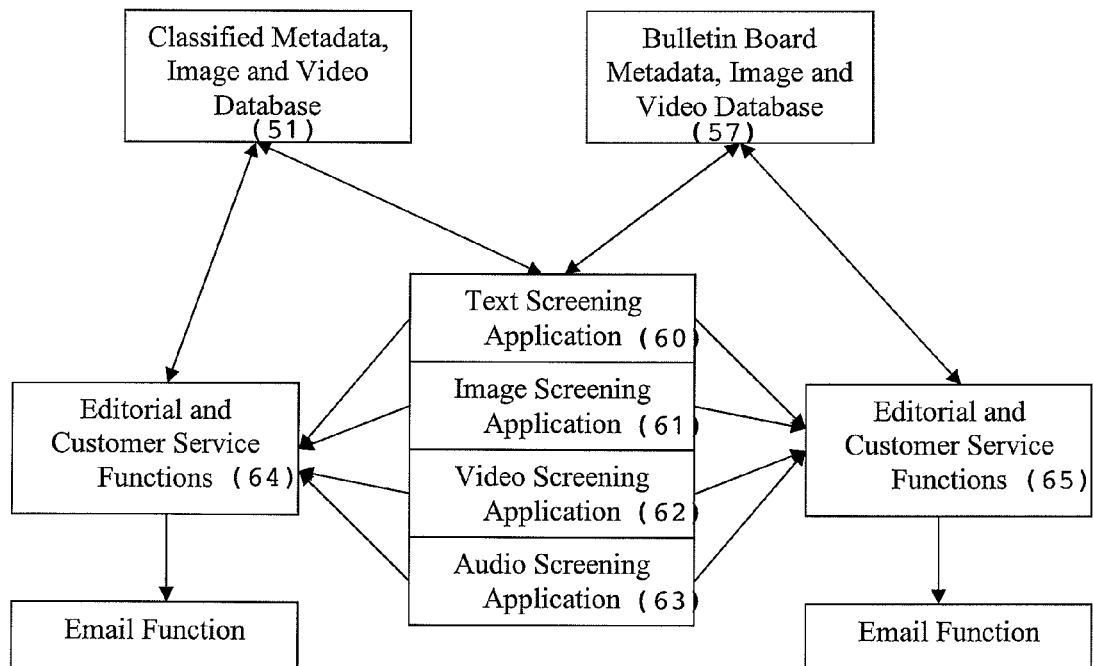


Figure 2C: Content Screening System

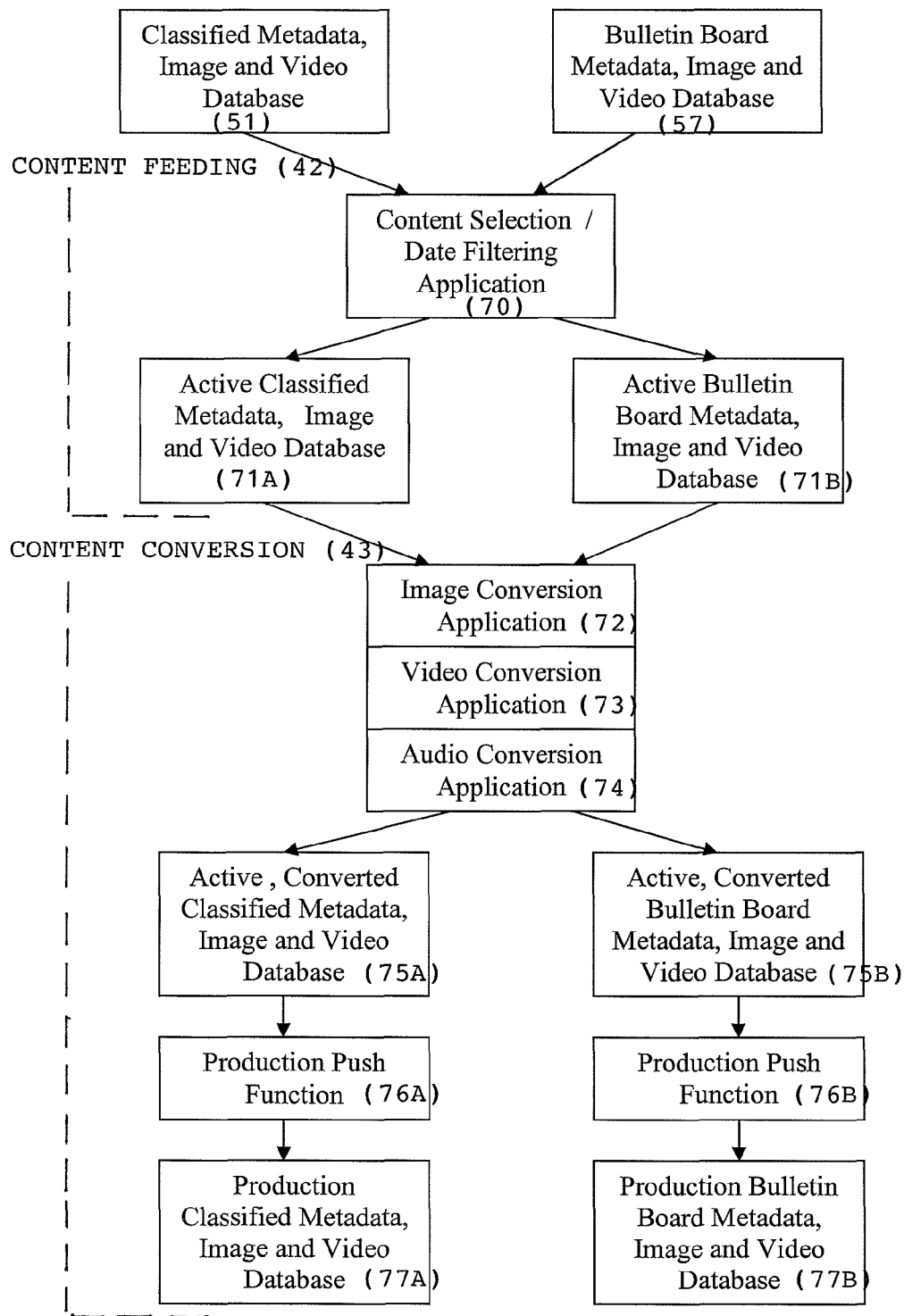


Figure 2D: Content Feed and Conversion System

# VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICES SUBSCRIBERS

## CROSS-REFERENCE TO RELATED APPLICATIONS

This U.S. Patent Application is a continuation application and claims the benefit of copending U.S. patent application Ser. No. 14/978,953, filed on Dec. 22, 2015, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY METHOD FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", which is a continuation of U.S. patent application Ser. No. 14/706,721, filed on May 7, 2015, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY METHOD FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 9,338,511 on May 10, 2016, which is a continuation application of U.S. patent application Ser. No. 12/852,663, filed on Aug. 9, 2010, of the same inventor and entitled "SYSTEM FOR ADDING OR UPDATING VIDEO CONTENT FROM INTERNET SOURCES TO EXISTING VIDEO-ON-DEMAND APPLICATION OF A DIGITAL TV SERVICES PROVIDER SYSTEM", issued as U.S. Pat. No. 9,078,016 on Jul. 7, 2015, which is a divisional application of U.S. patent application Ser. No. 11/952,552, filed on Dec. 7, 2007, of the same inventor and entitled "SYSTEM FOR MANAGING, CONVERTING, AND TRANSMITTING VIDEO CONTENT FOR UPLOADING ONLINE TO A DIGITAL TV SERVICES PROVIDER SYSTEM", issued as U.S. Pat. No. 7,774,819 on Aug. 10, 2010, which is a divisional application of U.S. patent application Ser. No. 10/909,192, filed on Jul. 30, 2004, of the same inventor and entitled "SYSTEM AND METHOD FOR MANAGING, CONVERTING AND DISPLAYING VIDEO CONTENT ON A VIDEO-ON-DEMAND PLATFORM, INCLUDING ADS USED FOR DRILL-DOWN NAVIGATION AND CONSUMER-GENERATED CLASSIFIED ADS", issued as U.S. Pat. No. 7,590,997 on Sep. 15, 2009, each of which is hereby incorporated by reference as if fully set forth herein.

## TECHNICAL FIELD

This invention generally relates to the provision of interactive television services through cable TV infrastructure, and more particularly, to a system and method for managing, converting and displaying video content on a video-on-demand platform, and particularly, advertising displays used for drill-down navigation and displays of consumer-generated classified ads on TV.

## BACKGROUND OF INVENTION

Cable television (CATV) systems are used to deliver television services to a vast majority of TV-viewing homes in the U.S. and other technologically advanced countries. The typical CATV system has a cable service provider head end equipped with video servers to transmit CATV program signals through distribution lines to local nodes and from there to TV subscriber homes. Within the subscriber homes, the CATV program signals are transmitted to one or more customer-premises TV s which are coupled to external set-top boxes for channel tuning or are equipped with internal cable channel tuners.

Current CATV set-top boxes provide various functions for channel switching and program access between subscribers and the CATV head end. The more advanced digital set-top boxes are individually addressable from the CATV head end, and also allow subscribers to input via remote control units their selection inputs for transmission on a back channel of the connecting cable to the CATV head end, thereby enabling subscribers to access interactive television services and other types of advanced digital TV services. A primary type of interactive television system is referred to generally as a "video-on-demand" (VOD) system, wherein a viewer can enter a selection choice for a video program via the remote control unit to the set-top box and have the desired video program delivered instantaneously for display on the TV. Such VOD applications can include on-demand movies, documentaries, historic sports events, TV programs, commercials, advertisements, music videos, short-subjects, and even individual screen displays of information. VOD-based interactive television services generally allow a viewer to use the remote control to cursor through an on-screen menu and select from a variety of titles for stored video programs for individual viewing on demand. Advanced remote control units include button controls with VCR-like functions that enable the viewer to start, stop, pause, rewind, or replay a selected video program or segment. In the future, VOD-based interactive television services may be integrated with or delivered with other advanced interactive television services, such as webpage browsing, e-mail, television purchase ("t-commerce") transactions, and multimedia delivery.

With the increasing interactive functionality and customer reach of interactive television services, advertisers and content providers are finding it increasingly attractive to employ on-demand advertising, program content, and TV transactions for home viewers. VOD content delivery platforms are being designed to seamlessly and conveniently deliver a wide range of types of advertising, content, and transaction services on demand to home viewers. An example of an advanced VOD delivery platform is the N-Band (TM) system offered by Navic Systems, Inc., d/b/a Navic Networks, of Needham, Mass. This is an integrated system which provides an application development platform for third party application developers to develop new VOD service applications, viewer interfaces, and ancillary interactive services for deployment on VOD channels of CATV operators in cable service areas throughout the U.S. A detailed description of the Navic N-Band system is contained in U.S. patent application 2002/066,106, filed on May 30, 2002, which is incorporated herein by reference.

Advanced digital set-top boxes also have the ability to collect data such as a log of channels tuned to and programs watched by the viewer. The set top box can be designed to collect and report this data automatically to the cable head end. At the head end location, the viewer data can be aggregated over many users with personally identifying data removed, and provided to advertisers and program sponsors for information in designing and targeting new ads and programs for viewer preferences, thereby resulting in increased viewership, higher viewer impressions per ad or program, and ultimately increased revenues.

Current VOD ads and program offerings are generally produced for mass audiences. It would be particularly desirable to adapt a VOD delivery platform to deliver ads, promotions, programs, and informational content by allowing viewers to navigate readily and visually to specific items of interest. Such visual navigation for content delivery would be more likely to create a satisfying viewer experi-

ence, and also to engage individual viewers in on-demand TV services and transactions. It would also be a particularly desirable to adapt a VOD delivery platform to receive uploads of user ads from individuals such as through an online network for search, navigation, and display to TV subscribers.

### SUMMARY OF THE INVENTION

In accordance with a first objective of the present invention, a video-on-demand (VOD) content delivery system for delivery templated VOD content comprises:

- (a) a VOD Application Server located at a Cable Head End which manages a Database of templates for generating templated VOD content in response to requests for specific video content elements by viewer request signals transmitted from the TV equipment of a viewer to the Cable Head End;
- (b) a Video Server for storing video content encoded as video content elements and for supplying a requested video content element in response to the VOD Application Server for delivery to the TV equipment of the viewer; and
- (c) an Application Data Center for creating and storing a plurality of different templates ordered in a hierarchy for presentation of video content elements of different selected types categorized in hierarchical order, wherein a template for display of a video content element in a higher level of the hierarchy includes a link to one or more templates and video content elements in a lower level of the hierarchy, said plurality of hierarchically-ordered templates and links being stored in the Database managed by the VOD Application Server, and
- (d) wherein said VOD Application Server, in response to viewer request for a selected video content element of a higher order in the hierarchy, retrieves the corresponding template from said Database and corresponding video content element from said Video Server to provide a templated VOD content display on the viewer's TV equipment which includes one or more links to video content elements in a lower order of hierarchy, and upon viewer request selecting a link displayed in the templated VOD content to a video content element in the lower order of hierarchy, retrieves the corresponding template and video content element of lower order hierarchy for display on the viewer's TV equipment, thereby enabling the viewer to use drill-down navigation through TV displays of templated VOD content.

In a preferred embodiment of the templated VOD content delivery system, the system employs the templated content delivery to create a User Interface for the viewer to navigate through progressively more specific template (display ad) types linked in series to reach an end subject of interest to the viewer. Referred to herein as "Drill-Down Ads," the series of progressively more specific display ad types allow the subscriber to navigate to an end subject of interest while at the same time having a unique visual experience of moving visually through a series of ads mirroring the viewer's path to the end subject of interest.

As an example involving automobile advertising, the User Interface can provide a hierarchical ordering of video display ads that starts with an Auto Maker's ad displayed with links to Model ads. The viewer can select using the remote control unit a specific Model ad which is displayed with links to more specific levels of ads, such as "Custom

Packages", "Feature/Options", or "Color/Styling", etc., until it reaches an end subject of interest to the subscriber. The viewer would thus be able to navigate to specific content of interest while traversing through video ad displays of the Auto Maker, Models, Model A, Features, etc. Similarly, the viewer can navigate to specific content of interest while traversing through video ad displays of Local Dealers, Dealer A, Current Sales Promotions, etc. The templated VOD ads are generated dynamically by searching the VOD Application database with each current request by a viewer. This enables the system to dynamically generate and display updated advertising content that remains current. For example, if the Auto Maker changes the Model types available, or if Local Dealer A changes its current sales promotions, that advertiser's ads can be updated with new content and selection options on the system database, and the new templated ads can be generated dynamically, instead of new ads having to be filmed, produced, contracted, and installed with the cable TV company. Many other types of ads, subjects, and other interactive TV applications can be enabled with the use of the Drill-Down Navigation method. The selections or preferences exhibited by viewer navigation paths through the Drill-Down Navigation can also be tracked, profiled, and/or targeted as feedback data to advertisers for fine-tuning Drill-Down ad designs.

In accordance with a second objective of the invention, a video-on-demand (VOD) content delivery system for managing, converting and displaying consumer-generated classified ads on TV comprises:

- (a) a Content Management Website for enabling individual users to upload classified ad content on an online network connection from their remote computers, said uploaded classified ad content including associated meta data for identifying the ad content by title and topical area;
- (b) a Content Screening Component for receiving the classified ad content uploaded to the Content Management Website and screening the content for objectionable text, audio, video and/or images in the content, and for rejecting said content if objectionable text, audio, video and/or images are found;
- (c) a Content Feed Component for automatically transferring the classified ad content screened by the Content Screening Component with the associated meta data and supplying them to a Content Conversion Component;
- (d) a Content Conversion Component for automatically converting the transferred classified ad content supplied from the Content Feed Component into a video data format compatible with the VOD content delivery system, and for automatically indexing the converted classified ad content in a Video Server database according to title and topical area as specified in the content meta data; and
- (e) a VOD Application Server, operatively connected between said Content Conversion Component and a Cable Head End connected via cable connection to the TV equipment of viewers, for delivering from the Cable Head End classified ad title and topical area listings data generated from the meta data for the classified ad content to be displayed on the TV equipment of viewers to enable their searching for classified ads of interest and, in response to a viewer request signal requesting a specific classified ad of interest transmitted via the TV equipment to the Cable Head End, for retrieving the requested classified ad from the



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Video Server database and transmitting it to be displayed to the viewer on their TV equipment.

In a preferred embodiment of the TV classified ads system, individual users can upload classified ad content via their web browser, including text, audio, video and/or image files in industry-standard file formats, to the Content Management Website. The Content Screening Component is configured to parse the input for objectionable text words in text files, detect objectionable audio words in audio files, and optically recognize objectionable images in graphics or video files. The Content Feed Component automatically transmits classified ad content that has been appropriately contracted for display (paid for, and within the contracted time period) to the Content Conversion Component and the Video Server database. The VOD Application Server responds to requests input by viewers via remote control and retrieves the requested classified ads indexed by their titles and topical areas from the Video Server database to be displayed on the viewer's TV. The Content Management Website can also include functions for: (a) Account Management of user transaction accounts; (b) Content Classification to facilitate user designation of titles and topical areas to uniquely and attractively identify their classified ads; (c) Bulletin Board for creation and management of consumer-generated content related to announcements and other items of general interest to be displayed to viewers in subsidiary displays; and (d) Transaction Processing for the processing the payment of user fees, changes, and refunds in the use of the system.

The foregoing and other objects, features and advantages of the invention are described in further detail below in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1A is a diagram of an overall architecture for a VOD Content Delivery System in accordance with the present invention, FIG. 1B shows an example of Drill-Down Ad navigation, and FIG. 1C shows an example of the templated ad display model.

FIG. 2A is a process flow diagram of the overall architecture of a consumer generated Classified Ad application for the VOD Content Delivery System, FIG. 2B illustrates a Content Management Website for the Classified Ad application, FIG. 2C illustrates a Content Screening Component of the system, and FIG. 2D illustrates a Content Feed and Conversion Components of the system.

#### DETAILED DESCRIPTION OF INVENTION

Referring to FIG. 1A, an overall system architecture for a VOD content delivery system includes a VOD Application Server **10** located at a Cable Head End. The VOD Application Server **10** manages a Database **11** of templates and video content segments from Video Server **12** for generating templated VOD content. The VOD content is generated in response to a viewer request signal transmitted from the Digital Set Top Box **21** of a viewer's TV equipment through the Digital Cable Television System **13** to the VOD Application Server **10** at the Cable Head End. The VOD Application Server **10** may be of the type which enables any compatibly-developed VOD applications to be loaded on and operated on the server. An example of such a VOD Application Server is the Navic N-Band(TM) server as previously described. Templates for displaying VOD content are created at an Application Data Center **30** and stored in the Database **11** for use by the operative VOD application.

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The templates may be designed, for example, to present video ad content displays in a logo frame, or to provide navigation buttons and viewer selection options in a frame around currently displayed video content. In the preferred embodiment described in greater detail below, the templates are used to provide navigation aids in a series of progressively more focused ad display types. A Video Content Encoder **31** is used to encode raw video feeds into formatted video content segments compatible with the VOD platform and supply them through a Video Content Distribution Network **14** to the Video Server **12**.

In operation, the VOD Application Server **10** operates a VOD application for the CATV system, for example, "automobile infomercials on demand". The viewer sends a request for selected VOD content, such as to see an infomercial on a specific model type made by a specific auto manufacturer, by actuating a viewer request signal by a key press on the viewer's remote control unit transmitting an IR signal to the Set Top Box **21** that is sent on a back channel of the Digital Cable Television System **13** to the VOD Application Server **10** at the Cable Head End. In response to the signal, the VOD Application Server **10** determines the VOD content being requested and retrieves the infomercial ad display template from the Template Database **11** and video content segment from the Video Server **12**, in order to generate the corresponding templated VOD content. In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server **10** retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a "drill-down navigation" method to find specific end content of interest.

Referring to FIG. 1B, a preferred embodiment of the templated VOD content delivery system is shown providing a User Interface using Drill-Down Navigation through display ads, such as for automobile infomercials. When the viewer selects a VOD application (channel), such as "Wheels-On-Demand", the viewer's TV displays a Main Menu with buttons inviting the viewer to "Select Category". The viewer can select an "Auto" category, and the TV then displays an "Auto" menu with buttons inviting the viewer to "Select Make", such as Make A, Make B, etc. When the viewer makes a selection, such as Make A, the viewer's TV displays a further menu that is a Gateway into templated VOD content delivery which enables Drill-Down Navigation by templated display ads. Through the Gateway, the VOD Application leaves the Menu mode and enters the Drill Down Navigation mode for successively displays of hierarchically-ordered video content which allow the viewer to navigate to progressively more focused content. In this example, the highest level of the hierarchy includes categories for Model, Local Dealer, Sales Events, and/or Inventory. When the viewer selects a category such as "Model" from the Gateway, for example, the VOD Application creates a templated ad display showing video content generic to all models by that automaker framed in a frame which has links (buttons or choices) for a list of the specific models made by that automaker. When the viewer selects the link to a specific model, "Model A" for example, the VOD Application creates a templated ad display showing video content for Model A, and the viewer can then choose to run a long-form infomercial of the Model A video. Alternatively, the Drill-

Down Navigation can continue with further levels of specificity, such as “Custom Packages”, “Options”, “Colors/Stylings”, etc. Similarly, the selection of the “Local Dealer” category from the Gateway can bring up a templated ad for local dealers with links to specific local dealers in the viewer’s cable service area, and a click on a specific “Dealer A” can bring up a templated ad for Dealer A with further links to more specific content pertaining to Dealer A, such as “Current Sales Promotions”, etc.

In this manner, the templated VOD content delivery system allows the viewer to navigate to specific content of high interest to the viewer using the Drill-Down ads as a navigation tool, while at the same time having a unique visual experience of moving through a series of ads mirroring the viewer’s path to the subject of interest. The templated VOD ads are generated dynamically by searching the Content/Template database with each request by a viewer, enabling the system to display updated navigation choices and content simply by updating the database with updated links and video content. For example, if the Auto Maker changes the Model types of autos currently available, or if Local Dealer A changes its current sales promotions for autos currently available, that advertiser’s ads can be updated with new, template frame navigation links and content, instead of entirely new ads or screen displays having to be shot, produced, contracted, delivered, and programmed with the cable TV company. Many other types of layered or in depth ads, subjects, and interactive TV applications can be enabled with the use of the Drill-Down Navigation method. The selections or preferences exhibited by viewer navigation paths through the Drill-Down Navigation can also be tracked, profiled, and/or targeted as feedback data to advertisers for fine-tuning Drill-Down Navigation designs.

In FIG. 1C, an example illustrates how a templated VOD display is generated in layers. A Background screen provides a basic color, logo, or graphical theme to the display. A selected Template (display frame) appropriate to the navigation level the intended display resides on is layered on the Background. The Template typically has a frame in which defined areas are reserved for text, display image(s), and navigation links (buttons). Finally, the desired content constituted by associated Text, Image & Buttons is retrieved from the database and layered on the Template. The resulting screen display shows the combined background logo or theme, navigation frame, and text, video images, and buttons.

Referring again to FIG. 1A, a Tracking System 15 of conventional type can be installed at the Cable Head End to aggregate non-personal data on what channels and programs viewers watch. For the Drill Down Navigation method, the Tracking System 15 can include tracking of the navigation paths viewers use to find subjects of interest in a VOD Application. The aggregation of viewer navigation data can indicate what subjects are most popular, whether some subjects are of greater interest to viewers at certain times of day, of certain demographics, or in relation to certain products or services. The VOD Application Server 10 can export the aggregated viewer navigation data to an external Profiling System 16, such as a non-biased or unrelated firm applying profile analysis methods. The results of the Profiling System 16 can be communicated to a Targeting System 17, such as a template design firm or content production company, to fine-tune the presentation of the templated VOD content consistent with viewer preferences or interests. The feedback from the Targeting System can be sup-

plied as feedback to the VOD Application Server to modify the Content/Template Database 11.

Another application for the templated VOD content delivery system can be developed to support video advertisements which link national to local market ad campaigns in “drill-down” fashion. Advertisers, both national and local, can pay for placement of their video advertisements on the system. When the VOD Application is run, the national ads are displayed as a Gateway to linking to the local market ads. In this manner, national ads can be used to transition viewers from general interest in a product to finding specific information about the product available locally.

The templated VOD content delivery system can also support “traffic building” videos, including music videos, that may not generate direct revenue. Once a video is encoded and registered into the system, the management and distribution of the video is conducted through software systems and automated controls. The User Interface provides the user with the ability to navigate and find desired video content. Selection of a category presents the user with a list of video titles available for playback. Categories and title lists can be generated using real-time database queries, allowing for database-driven management of content within the User Interface. The User Interface can also support a search interface which allows the user to search the video content database to generate a list of video titles with specific characteristics.

The core services and functions of the VOD content delivery system can include:

- Encoding—converts videos to proper digital format for playback on cable video-on-demand systems, currently MPEG2 format
- Metadata Input—allows for the input of descriptive data regarding each video
- Packaging—Prepares a data package for transport consisting of the encoded video file and the metadata
- Scheduling—Establishes the schedule when packages are to be delivered to cable video-on-demand systems via the transport system
- Transport—Digital broadcast medium through which the packages are migrated from the central processing facility to the cable video-on-demand systems.

The core services and functions of the User Interface system can include:

- Development of UI “pages”—An Internet-based system is used for the composition, coding and quality assurance of the User Interface images (“pages”) that are presented to the user on an interactive basis.
- Category and List Presentation—The category lists and title lists presented to the user for navigation and selection can be generated and rendered real-time using database queries against the video metadata database. These lists can also be incorporated in the fully rendered graphics if real-time queries are not required or desired.
- Distribution—The UI system supports a scheduling and transport subsystem separate from the video distribution system for the distribution of the UI assets and related set-top box software components to local UI servers installed at the cable head end.
- User Input Device—The UI system receives user input and commands from the IR remote control used with the digital set-top box.
- User Database—The UI system maintains a database of set-top box addresses that is used to identify the users of the system. This database is the seed for the Profiling Database system described below.

Targeting—The UI system is capable of changing the UI presentation to a specific user based on the information contained in the User Database and the Profiling Database.

The core services and functions of the Tracking System can include:

Consolidation of Video-On-Demand Data—The Tracking System can be made capable of ingesting and consolidating usage data provided by the cable video-on-demand systems. This may be performed through automated interfaces or “feeds”, or it may be performed through the batch processing of data files delivered by the cable operators.

Consolidation of UI Data—The Tracking System can gather and consolidate data from the UI system on an automated basis. The UI system can provide data describing the user commands, behaviors, responses and requests generated by each user while using the User Interface system.

Reporting—The Tracking System can generate reports and analyses of the Video-On-Demand data and the UI data.

Web Interface—The Tracking System can include a Web interface for providing authorized users such as advertisers with access to specific reports.

The core services and functions of the Profiling System can include:

Consolidation of Profiling Data—The Profiling System can be made capable of consolidating on a continuing, automated basis all user-related data requested by advertisers or by the system operator.

Interface to Targeting System—The Profiling System can provide pertinent data as required by the Targeting System within the UI system. This data is used to reformat UI presentations based on the data values.

Interface to Targeting System—The Profiling System data can be accessed and incorporated into the Targeting System.

Support of Private and Public Data—The Profiling System can segregate and maintain as private any data gathered specifically for an advertiser for the use of that advertiser.

As another aspect of the present invention, a VOD content delivery system may be adapted to offer consumer-generated classified ads on TV. The VOD content delivery system is provided with a Content Management frontend to receive consumer input and convert it to video display ads maintained in the system database. Referring to FIG. 2A, a system for managing, converting and displaying individual consumer-generated ads on a VOD content delivery system has a Web-based Content Management System 40 for enabling an individual user to upload content from their computer via a web browser to display a consumer-generated video ad on TV. The uploaded content includes meta data for classifying the video ad by title and topical area(s). Content Screening System 41 is used for screening the content input by the individual user, such as by performing automatic searching for objectionable text, audio, video and/or images and rejecting the content if found objectionable. A Content Feed System 42 is used to automatically transfer consumer-generated content screened through the Content Screening System 41 to a Content Conversion System 43. This system automatically converts the consumer-generated content supplied by the Content Feed System 42 into video display format compatible with the VOD content delivery system. The converted video ad is indexed by title and classified topical areas according to the meta data supplied by the user, in accordance with the indexing system maintained by the Content Management System. The VOD Content Delivery System 44 operates a Classified Ads VOD Application in which menus for finding classified ads

are navigated by viewers, and specific classified ads are delivered through the Digital Cable Television System for display as video ads on the viewer's TV equipment in response to viewer request input by remote control to the Digital Set Top Box 21, as described previously with respect to the operation of the general VOD platform.

Referring to FIG. 2B, the Web-based Content Management System 40 includes a plurality of functional components to allow consumers to create and manage their own classified ads as interactive television content, as well as pay for the distribution of their content within the digital cable television system. A Classified Management Application 50 is used to receive consumer-input content, have it screened (by the Content Screening System 41, not shown), and store it in the Classified Metadata, Image and Video Database 51. Consumer payment for running video ads is handled by the Transaction Processing Component 53. Also included in the Content Management System is an Account Management Component 55 and Account & Permissions Database 56 for management of user accounts for use of the web-based TV Classified Ads system. A Bulletin Board Ads application may be operated in parallel with the TV Classified Ads application. A Bulletin Board Management Application 54 and Database 57 enable the creation and management of consumer-generated content relating to public announcements and other items of general interest for groups, organizations or topics. The preferred VOD Content Delivery System uses templated VOD content, and a Template Library 58 is used to store templates for both the Classified Ads and Bulletin Board Ads applications.

The Account Management Component controls the access by persons to the web-based Content Management System. The Account Management Component identifies persons accessing the system for the first time and allows these persons to register and create an account by providing an account name, password, credit card information and other information required for the payment of fees. The Account Management Component controls the access by registered users to their accounts and manages the privileges and security associated to all accounts. Persons may create accounts for the creation and management of Classified Ads. Accounts capable of accessing the Bulletin Board Management Application may also be assigned by a system administrator in the Account Management Component. Any account capable of accessing the Bulletin Board application can then create and manage bulletin board ads for the assigned bulletin boards.

The Classified Content Management System enables users to upload text, audio, video, and/or image files for classified ads in industry-standard file formats and have it converted into video display ads compatible with the VOD Content Delivery System. Classified ads are searched on the viewer's TV equipment by menus and lists indexed by title and topical areas corresponding to the metadata associated with the classified ads content. Selection of a listed item results in the display of a TV display ad containing uploaded text, images, video and/or audio. Users pay listing fees to the operator of the system for maintaining and displaying the classified ads on the digital cable television system.

Significant features of the Classified Ads Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) uploading digital images of the item to the Content Management System; (c) uploading digital video of the item to the Content Management System; (d) uploading digital audio regarding the item to the Content Management System; (e) automated size and resolution processing of digital images uploaded to the

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system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided content; (j) ability to save classified content in persistent memory or storage for subsequent modification; (k) ability to mark classified content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when a classified content item is to become accessible by users of the interactive television system and the data and time when a classified content item is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that a specific content item is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created classified content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific consumer-generated content by users of the interactive television system; and (p) ability to calculate fees for classified content and submit payment of the fees using the Transaction Processing system.

As noted in (i) above, the Classified Content Management System allows the user to view the content they have composed using the templates. The templates are designed specifically for use on interactive television systems and the user is able to view on the web-interface their content as composed for presentation on television. As noted in (j) above, the Classified Content Management System allows the persistent storage of classified content; although the user is composing interactive television pages using a template system, the content is persistently stored as individual elements to simplify changes by the user and to allow the conversion of the content to different formats as required by different interactive television systems.

The Bulletin Board Content Management System provides the users of the web-based Content Management System with content creation and content management tools for the creation and maintenance of consumer-generated content related to announcements and other informational items of general interest. Bulletin Board content is displayed on the interactive television system as dedicated interactive television screens (bulletin boards), where approved groups, organizations or topics are each assigned a bulletin board for the display of their information. Bulletin Board content is displayed as list items organized within a bulletin board; selection of a list item results in the display of an interactive television screen containing or providing access to the descriptive data, text, images, video and audio regarding the item.

An alternative implementation of a Bulletin Board can display the content as scrolling text, where the user scrolls through the text, or the text scrolls automatically. Bulletin Board accounts will pay fees determined by the operator of the system for the distribution of the bulletin board content on the interactive television system for display on the digital cable television system. Significant features of the Bulletin Board Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) upload digital images to the content management; (c) upload digital video to the content management system; (d) upload digital audio to the content management system; (e) automated size and resolution processing of digital images

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uploaded to the system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided bulletin board content; (j) ability to save bulletin board content in persistent memory or storage for subsequent modification; (k) ability to mark bulletin board content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when specific bulletin board content is to become accessible by users of the interactive television system and the data and time when specific bulletin board content is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that specific bulletin board content is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created bulletin board content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific bulletin board content by users of the interactive television system; and (p) ability to calculate fees for bulletin board content and submit payment of the fees in conjunction with the Transaction Processing component.

The Transaction Processing component allows users of the Classified Content Management System and Bulletin Board Content Management System to determine and pay for any fees resulting from their use of these systems. The Transaction Processing component will allow users to pay for fees using credit cards or other supported payment methods. Significant features of the Transaction Processing component include: (a) ability to maintain business rules for use by the Transaction Processing system to determine fees based on user type and content type; (b) ability to maintain business rules for one or more payment methods for use by the Transaction Processing system in handling the settlement of fees; (c) ability to maintain business rules for user account and payment settlement conditions such as delinquency and lack-of-credit for use by the Transaction Processing system in determining user account privileges and content status; and, (d) ability to process payment of fees in real-time for payment methods that support real-time settlement.

Referring to FIG. 2C, the Content Screening System (41) is comprised of a Text Screening Application 60 which searches for objectionable words or phrases, an Image Screening Application 61 which searches for objectionable graphic images, a Video Screening Application 62 which searches for objectionable images or audio words or phrases in video segments, and an Audio Screening Application 63 which searches for objectionable words or phrases in audio segments. The Content Screening System can be used for both Classified Ads content and Bulletin Board content. Content that has been screened by the Content Screening System is then transferred to the aforementioned Classified Ads Database 51 or the Bulletin Board Content Database 57. The system also has component 64 for Editorial and Customer Service Functions for Classified Ads, and component 65 similarly for Bulletin Board content. These can each include an Email Function to send confirmations of input, reasons for rejection of posting, suggested corrections, further processing, and posting of content to consumers using the system.

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Significant features of the Content Screening System include: (a) ability to maintain a library of objectionable or illegal words and phrases for use in the screening of text; (b) ability to perform automated analysis of user content text using the text library as an input and alert system administration personnel to the use of objectionable or illegal content and the use of unknown and suspect words or phrases; (c) ability to maintain a library of objectionable or illegal image elements for use in the screening of images; (d) ability to perform automated image recognition analysis against user content images using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (e) ability to maintain a library of objectionable or illegal image elements for use in the screening of video; (f) ability to perform automated image recognition analysis against user content video using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (g) ability to maintain a library of objectionable or illegal audio elements for use in the screening of audio; (h) ability to perform automated audio analysis against user content audio using the library of audio elements as an input and alert system administration personnel to the use of objectionable or illegal content; and (i) ability to save screened content in persistent memory or storage for subsequent processing. Content Screening is automatically performed with the Content Management System 40 during the user process of submitting and/or creating consumer-generated content or may be performed as a process subsequent to the creation of content by the user.

Referring to FIG. 2D, the Content Feed System 42 and the Content Conversion System 43 provide for the transfer of user content from the Content Screening System and conversion to video content format compatible with the VOD Content Delivery System 44. The Content Feed System 42 has a Content Selection/Date Filtering Application which selects consumer-generated content uploaded to the system that is within the dates contracted for posting and display of the content as Classified Ads or on Bulletin Boards. Content within the active date range is transferred to the Active Classified Ads Database 71A or the Active Bulletin Board Database 71B.

The Content Conversion System receives consumer-generated content in industry standard formats or created in viewable format (HTML) on the web-based input system and converts the content into formats compatible with the VOD Content Delivery System and for display on viewers' televisions. The Content Conversion System 43 has an Image Conversion Application 72 which converts consumer-uploaded image files (in industry-standard formats such as JPEG, GIF, TIFF, BMP, PDF, PPT, etc.) into VOD content format, a Video Conversion Application 73 which converts consumer-uploaded video files into VOD content format, and an Audio Conversion Application 74 which converts consumer-uploaded audio files into VOD content format. Content converted to VOD content format is stored in the Active Converted Classified Ads Database 75A or the Active Converted Bulletin Board Database 75B. The content is subject to a further Production Push Function 76A, 76B and stored in the Production Classified Ads Database 77A or the Production Bulletin Board Database 77B, if any presentation formatting, date stamping, template framing, or other system editing is required by the system.

Significant features of the Content Feed System include: (a) ability to select user content for submission to the Content Conversion System through the testing of appropriate parameters including the date and time information

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contained in the user content; (b) ability to appropriately package the elements of the user content to permit the efficient transfer of these content elements to the Content Conversion System through an Application Program Interface or other interface; (c) ability to create, maintain and execute a schedule for when the Content Feed System will execute on an automatic basis for the automatic transfer of consumer-generated content to the Content Conversion System; and, (d) ability to execute the functions of the Content Feed System on a manual basis in the presence or absence of a schedule. The Content Feed System may be able to package and distribute content to single or multiple Content Conversion Systems.

Significant features of the Content Conversion system include: (a) ability to receive content packages delivered by the Content Feed System through an Application Program Interface or other interface; (b) ability to process the elements of consumer-generated content into data, text, graphic, video and audio elements that are compatible with the interactive television system and maintain the content presentation created by the user on the web-based Content Management System; (c) ability to save reformatted content in persistent memory or storage for subsequent distribution and use by the interactive television system; and, (d) ability to inform the interactive television system that consumer-generated content is available for distribution and use. The Content Conversion System may be added as a component system of the VOD Content Delivery System, or it may be implemented as a wholly separate system that connects to the VOD Content Delivery System through an Application Program Interface or other interface. When implemented as a system that is separate from the VOD Content Delivery System, it is possible to support multiple, different interactive television systems by either (a) incorporating multiple formatting requirements into a single instance of the Content Conversion System or (b) creating multiple Content Conversion Systems, each supporting the formatting requirements for a specific interactive television system. Either implementation allows for a single instance of consumer-generated content that is created and maintained using the web-based Content Management System to be distributed and displayed on multiple, different interactive television systems with different formatting requirements.

The VOD Content Delivery System 44, as described previously, provides for the distribution of screened, converted, properly formatted consumer-generated content to viewers' televisions, typically through the use of digital set-top boxes connected to a digital cable television system capable of supporting real-time two-way data transfer between the set-top box and the Cable Head End. Significant features of the VOD Content Delivery System include: (a) ability to receive properly formatted content from the Content Conversion System; (b) ability to distribute said content over a digital cable television system and display this content on television as an interactive television presentation; (c) ability to receive user commands generated by an infrared remote control device, keyboard or other device; (d) ability to respond to the user commands by displaying appropriate content or executing desired functionality; and, (e) ability to generate and collect data regarding the user sessions and the viewing data regarding consumer-generated content on the interactive television system and make this data accessible to the Tracking System. The VOD Content Delivery System can employ templated VOD content delivery, as described previously with respect to FIG. 1A, enabling use of the Drill Down Navigation method in which

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viewers can navigate visually through classified ad hierarchical categories to specific titles or content.

The VOD Content Delivery System for the Classified Ads application can also employ the Tracking System **15** for the collection and consolidation of viewing data generated by the interactive television system and the generation of reports against this viewing data. For example, the Tracking System can track the number of viewer requests for viewing that a classified ad received in a given period and calculate billing charges accordingly. The Tracking System can make this information available to users of the Content Management System as well as to system administrative personnel performing general analysis of interactive television services and associated content. Significant features of the Tracking System include: (a) ability to access and process the data generated by the Classified Ads application; (b) ability to form summaries of the viewing data against desired parameters; (c) ability to save data, summaries and reports in persistent memory or storage for subsequent modification or access; (d) ability to make data, summaries and reports accessible by users of the web-based Content Management System, restricting the data accessible by any specific user to data regarding the content created by that user account on the Content Management System; and, (e) ability to make data, summaries and reports accessible by to system administration personnel.

It is understood that many modifications and variations may be devised given the above description of the principles of the invention. It is intended that all such modifications and variations be considered as within the spirit and scope of this invention, as defined in the following claims.

What is claimed is:

**1.** A set-top box, providing video-on-demand services and operatively connected to TV equipment of a TV service subscriber, programmed to perform the steps of:

(a) receiving, at the set-top box, via a closed system from a video-on-demand content delivery system comprising one or more computers and computer-readable memory operatively connected to the one or more computers, respective video-on-demand application-readable metadata that is associated with respective video content and is usable to generate a video-on-demand content menu;

wherein the respective video content was uploaded to a Web-based content management system by a respective content provider device associated with a respective video content provider via the Internet in a digital video format along with respective specified metadata including respective title information, category information, and subcategory information designated by the respective video content provider to specify a respective hierarchical location of a respective title of the respective video content within the video-on-demand content menu displayed on the TV equipment, wherein the respective video-on-demand application-readable metadata is generated according to the respective specified metadata;

(b) providing, to the TV subscriber at the set-top box, the video-on-demand content menu for navigating through titles, including the respective titles of the respective video content, in a drill-down manner by category information and subcategory information in order to locate a particular one of the titles whose associated video content is desired for viewing on the TV equipment, wherein the video-on-demand content menu lists the titles using the same hierarchical structure of respective category information and subcategory information

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as was designated by the respective video content provider in the respective specified metadata for the respective video content, wherein a plurality of different video display templates are accessible to the set-top box, and wherein the video-on-demand content menu is generated using at least one of the plurality of different video display templates and based at least upon the respective specified metadata; and

(c) in response to the TV service subscriber selecting, via a control unit in communication with the set-top box, a first respective title associated with a first video content from the hierarchical structure of respective category information and subcategory information of the video-on-demand content menu using drill-down navigation, transmitting the selection to the set-top box for display on the TV equipment; and

(d) receiving, at the set-top box, the first video content for display on the TV equipment of the TV service subscriber, wherein in response to the selection the first video content was retrieved from a video server associated with the video-on-demand content delivery system.

**2.** The set-top box of claim **1**, wherein the control unit is a remote control unit.

**3.** The set-top box of claim **1**, wherein the set-top box is programmed to allow the navigation through titles in a drill-down manner by navigation from a first level of the hierarchical structure of the video-on-demand content menu to a second level of the hierarchical structure to locate the particular one of the titles, wherein a first template of the plurality of different video display templates is used for displaying the first level of the hierarchical structure and wherein a second template of the plurality of different video display templates is used for displaying the second level of the hierarchical structure.

**4.** The set-top box of claim **3**, wherein the first level of the hierarchical structure in the video-on-demand content menu comprises a link to the second level of the hierarchical structure in the video-on-demand content menu.

**5.** The set-top box of claim **1**, wherein at least a first video display template of the plurality of different video display templates is associated with at least the first video content provider.

**6.** The set-top box of claim **1**, wherein some of the plurality of different video display templates correspond to different levels of the hierarchical structure of respective category information and subcategory information.

**7.** The set-top box of claim **1**, wherein the at least one of the plurality of different video display templates is configured to display a logo frame.

**8.** The set-top box of claim **1**, wherein the at least one of the plurality of different video display templates is configured to provide navigation buttons.

**9.** The set-top box of claim **1**, wherein the at least one of the plurality of different video display templates is configured to provide viewer selection options.

**10.** The set-top box of claim **1**, wherein the respective video-on-demand application-readable metadata further includes descriptive data about the video content.

**11.** The set-top box of claim **1**, wherein the respective video-on-demand application-readable metadata further includes at least one display image associated with the video content.

**12.** The set-top box of claim **1**, wherein the respective category information and subcategory information associ-

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ated with the first video content correspond to one or more topics that pertain to video content from more than one content provider.

13. The set-top box of claim 1, wherein the set-top box is further programmed to generate, using at least one of the plurality of different video display templates, a templated video-on-demand display that comprises a background and a template layer having one or more areas for display of metadata provided by the video content provider.

14. The set-top box of claim 1, wherein the set-top box is further programmed to track viewer navigation paths corresponding to the drill-down navigation.

15. The set-top box of claim 1, wherein the set-top box is further programmed to generate the video-on-demand content menu dynamically by retrieving menu content from a database operatively connected to the video-on-demand content delivery system and using the retrieved menu content with the at least one of the plurality of different video display templates.

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16. The set-top box of claim 1, wherein the set-top box is further programmed to generate, by real-time database queries of the respective category information and subcategory information uploaded by each respective video content provider, the hierarchical structure of category information and subcategory information in the video-on-demand content menu.

17. The set-top box of claim 1, wherein the video-on-demand content menu comprises a search interface that allows the TV subscriber to search a video content database based on specified characteristics.

18. The set-top box of claim 1, wherein the video-on-demand content menu is an interactive user interface.

19. The set-top box of claim 1, wherein the set-top box is further programmed to generate a templated video-on-demand display that comprises a background screen using at least one of the plurality of different video display templates.

\* \* \* \* \*



US010536750B2

(12) **United States Patent**  
**Perez**

(10) **Patent No.:** **US 10,536,750 B2**  
(45) **Date of Patent:** **\*Jan. 14, 2020**

(54) **VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS**

(58) **Field of Classification Search**  
CPC ..... H04N 21/234; H04N 21/235  
See application file for complete search history.

(71) Applicant: **Broadband iTV, Inc.**, Honolulu, HI (US)

(56) **References Cited**  
U.S. PATENT DOCUMENTS

(72) Inventor: **Milton Diaz Perez**, Tiburon, CA (US)

4,706,121 A 11/1987 Young  
4,751,578 A 6/1988 Reiter et al.  
(Continued)

(73) Assignee: **Broadband iTV, Inc.**, Honolulu, HI (US)

FOREIGN PATENT DOCUMENTS

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

EP 1 164 796 A1 12/2001  
EP 1 361 759 A1 11/2003  
(Continued)

This patent is subject to a terminal disclaimer.

OTHER PUBLICATIONS

(21) Appl. No.: **16/381,645**

PTAB Decision Denying Institution of Covered Business Method Patent Review, Apr. 1, 2015, CBM2014-00189, *Hawaiian Telcom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

(22) Filed: **Apr. 11, 2019**

(Continued)

(65) **Prior Publication Data**

US 2019/0238945 A1 Aug. 1, 2019

*Primary Examiner* — Mushfikh I Alam

(74) *Attorney, Agent, or Firm* — Amster, Rothstein & Ebenstein LLP

**Related U.S. Application Data**

(57) **ABSTRACT**

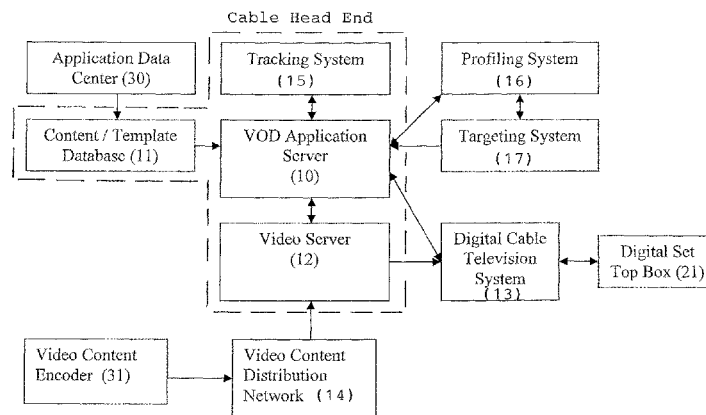
(60) Continuation of application No. 15/999,559, filed on Aug. 20, 2018, now Pat. No. 10,306,321, which is a (Continued)

A video-on-demand (VOD) content delivery system has a VOD Application Server which manages a database of templates for presentation of video content elements of different selected types categorized in hierarchical order. A web-based Content Management System receives content uploaded online in file formats with metadata for title and topical area, and automatically converts it into video data format compatible with the VOD content delivery system indexed by title and topical area. A User Interface for the system delivers listings data to the viewer's TV indexed by title and topical area specified by the uploaded metadata.

(51) **Int. Cl.**  
**H04N 21/234** (2011.01)  
**H04N 21/236** (2011.01)  
(Continued)

(52) **U.S. Cl.**  
CPC ..... **H04N 21/47202** (2013.01); **G06Q 30/02** (2013.01); **H04N 7/17318** (2013.01);  
(Continued)

**10 Claims, 7 Drawing Sheets**



VOD Content Delivery System, Overall Architecture



## Related U.S. Application Data

(56)

## References Cited

continuation of application No. 15/864,502, filed on Jan. 8, 2018, now Pat. No. 10,057,649, which is a continuation of application No. 15/582,155, filed on Apr. 28, 2017, now Pat. No. 9,866,909, which is a continuation of application No. 15/190,954, filed on Jun. 23, 2016, now Pat. No. 9,641,896, which is a continuation of application No. 14/978,881, filed on Dec. 22, 2015, now Pat. No. 9,386,340, which is a continuation of application No. 14/703,597, filed on May 4, 2015, now Pat. No. 9,232,275, which is a continuation of application No. 12/852,663, filed on Aug. 9, 2010, now Pat. No. 9,078,016, which is a division of application No. 11/952,552, filed on Dec. 7, 2007, now Pat. No. 7,774,819, which is a division of application No. 10/909,192, filed on Jul. 30, 2004, now Pat. No. 7,590,997.

## (51) Int. Cl.

**H04N 21/472** (2011.01)  
**G06Q 30/02** (2012.01)  
**H04N 7/173** (2011.01)  
**H04N 21/2547** (2011.01)  
**H04N 21/258** (2011.01)  
**H04N 21/2743** (2011.01)  
**H04N 21/431** (2011.01)  
**H04N 21/4722** (2011.01)  
**H04N 21/482** (2011.01)  
**H04N 21/81** (2011.01)  
**H04N 21/84** (2011.01)  
**H04N 21/858** (2011.01)  
**H04N 21/235** (2011.01)  
**H04N 21/61** (2011.01)  
**H04N 21/422** (2011.01)  
**H04N 21/643** (2011.01)  
**H04N 21/254** (2011.01)  
**H04N 21/4627** (2011.01)  
**H04N 21/262** (2011.01)  
**H04N 21/222** (2011.01)  
**H04N 21/2343** (2011.01)  
**H04N 21/239** (2011.01)  
**H04N 21/442** (2011.01)  
**H04N 21/438** (2011.01)

## (52) U.S. Cl.

CPC ..... **H04N 21/2221** (2013.01); **H04N 21/235** (2013.01); **H04N 21/2353** (2013.01); **H04N 21/2393** (2013.01); **H04N 21/234309** (2013.01); **H04N 21/2541** (2013.01); **H04N 21/2547** (2013.01); **H04N 21/25858** (2013.01); **H04N 21/25891** (2013.01); **H04N 21/26225** (2013.01); **H04N 21/2743** (2013.01); **H04N 21/42204** (2013.01); **H04N 21/4312** (2013.01); **H04N 21/4314** (2013.01); **H04N 21/4383** (2013.01); **H04N 21/44222** (2013.01); **H04N 21/4627** (2013.01); **H04N 21/4722** (2013.01); **H04N 21/482** (2013.01); **H04N 21/4821** (2013.01); **H04N 21/6118** (2013.01); **H04N 21/6125** (2013.01); **H04N 21/6175** (2013.01); **H04N 21/64322** (2013.01); **H04N 21/812** (2013.01); **H04N 21/84** (2013.01); **H04N 21/858** (2013.01); **H05K 999/99** (2013.01)

## U.S. PATENT DOCUMENTS

5,446,891 A 8/1995 Kaplan et al.  
 5,479,268 A 12/1995 Young et al.  
 5,485,219 A 1/1996 Woo  
 5,550,735 A 8/1996 Slade et al.  
 5,559,549 A 9/1996 Hendricks et al.  
 5,566,287 A 10/1996 Delpuch  
 5,583,763 A 12/1996 Atcheson et al.  
 5,589,892 A 12/1996 Knee et al.  
 5,592,551 A 1/1997 Lett et al.  
 5,594,936 A 1/1997 Rebec et al.  
 5,616,876 A 4/1997 Cluts  
 5,648,824 A 7/1997 Dunn et al.  
 5,670,730 A 9/1997 Grewe et al.  
 5,686,954 A 11/1997 Yoshinobu et al.  
 5,689,799 A 11/1997 Dougherty et al.  
 5,699,125 A 12/1997 Rzeszewski et al.  
 5,701,161 A 12/1997 Williams et al.  
 5,721,827 A 2/1998 Logan et al.  
 5,734,853 A 3/1998 Hendricks et al.  
 5,739,451 A 4/1998 Winksy et al.  
 5,758,258 A 5/1998 Shoff et al.  
 5,759,101 A 6/1998 Von Kohorn  
 5,768,592 A 6/1998 Chang  
 5,778,181 A 7/1998 Hidary et al.  
 5,790,176 A 8/1998 Craig  
 5,790,426 A 8/1998 Robinson  
 5,790,935 A 8/1998 Payton  
 5,798,785 A 8/1998 Hendricks et al.  
 5,798,921 A 8/1998 Johnson et al.  
 5,805,763 A 9/1998 Lawler et al.  
 5,812,123 A 9/1998 Rowe et al.  
 5,813,014 A 9/1998 Gustman  
 5,822,123 A 10/1998 Davis et al.  
 5,826,102 A 10/1998 Escobar  
 5,832,499 A 11/1998 Gustman  
 5,850,218 A 12/1998 LaJoie et al.  
 5,859,898 A 1/1999 Checco  
 5,867,821 A 2/1999 Ballantyne  
 5,872,850 A 2/1999 Klein et al.  
 5,884,033 A 3/1999 Duvall et al.  
 5,892,536 A 4/1999 Logan et al.  
 5,914,746 A 6/1999 Matthews  
 5,918,303 A 6/1999 Yamaura et al.  
 5,926,230 A 7/1999 Nijima et al.  
 5,931,901 A 8/1999 Wolfe  
 5,956,716 A 9/1999 Kenner et al.  
 5,969,283 A 10/1999 Looney et al.  
 5,991,801 A 11/1999 Rebec et al.  
 6,005,561 A 12/1999 Hawkins et al.  
 6,008,803 A 12/1999 Rowe et al.  
 6,018,768 A 1/2000 Ullman et al.  
 6,025,837 A 2/2000 Matthews et al.  
 6,029,045 A 2/2000 Picco et al.  
 6,038,591 A 3/2000 Wolfe  
 6,049,823 A 4/2000 Hwang  
 6,062,868 A 5/2000 Toriumi  
 6,088,455 A 7/2000 Logan et al.  
 6,088,722 A 7/2000 Herz et al.  
 6,092,080 A 7/2000 Gustman  
 6,100,883 A 8/2000 Hoarty  
 6,112,186 A 8/2000 Bergh et al.  
 6,118,442 A 9/2000 Tanigawa  
 6,118,450 A 9/2000 Proehl et al.  
 6,128,012 A 10/2000 Seidensticker, Jr. et al.  
 6,148,081 A 11/2000 Szymanski et al.  
 6,161,142 A 12/2000 Wolfe  
 6,163,316 A 12/2000 Killian  
 6,166,730 A 12/2000 Goode et al.  
 6,177,931 B1 1/2001 Alexander et al.  
 6,182,094 B1 1/2001 Humpleman et al.  
 6,201,538 B1 3/2001 Wugofski  
 6,205,582 B1 3/2001 Hoarty  
 6,208,799 B1 3/2001 Marsh et al.  
 6,233,736 B1 5/2001 Wolzien  
 6,237,146 B1 5/2001 Richards

(56)	<b>References Cited</b>			7,444,402 B2 *	10/2008	Rennels .....	H04H 20/31 709/219
	U.S. PATENT DOCUMENTS			7,471,834 B2	12/2008	Sull et al.	
				7,490,346 B2	2/2009	Alao et al.	
6,248,946 B1	6/2001	Dwek		7,493,643 B2	2/2009	Ellis	
6,269,275 B1	7/2001	Slade		7,516,472 B2	4/2009	Danker et al.	
6,289,346 B1	9/2001	Milewski et al.		7,548,565 B2	6/2009	Sull et al.	
6,305,016 B1	10/2001	Marshall et al.		7,584,159 B1	9/2009	Chakrabarti et al.	
6,317,885 B1	11/2001	Fries		7,590,997 B2	9/2009	Diaz Perez	
6,332,175 B1	12/2001	Birrell et al.		7,594,245 B2	9/2009	Sezan et al.	
6,357,042 B2	3/2002	Srinivasan		7,606,883 B1	10/2009	Allibhoy et al.	
6,377,530 B1	4/2002	Burrows		7,624,337 B2	11/2009	Sull et al.	
6,393,158 B1	5/2002	Gould et al.		7,631,336 B2	12/2009	Diaz Perez	
6,408,435 B1	6/2002	Sato		7,644,429 B2	1/2010	Bayassi et al.	
6,418,556 B1	7/2002	Bennington et al.		7,650,621 B2	1/2010	Thomas et al.	
6,445,398 B1	9/2002	Gerba et al.		7,690,020 B2	3/2010	Lebar	
6,446,083 B1	9/2002	Leight et al.		7,698,723 B2	4/2010	Hicks, III et al.	
6,476,826 B1	11/2002	Plotkin et al.		7,720,707 B1	5/2010	Mowry	
6,539,548 B1	3/2003	Hendricks et al.		7,725,740 B2	5/2010	Kudelski et al.	
6,546,393 B1	4/2003	Khan		7,761,899 B2	7/2010	Buehl et al.	
6,564,380 B1	5/2003	Murphy		7,774,819 B2	8/2010	Diaz Perez	
6,606,746 B1	8/2003	Zdepski et al.		7,801,838 B2	9/2010	Colbath et al.	
6,678,463 B1	1/2004	Pierre et al.		7,801,910 B2	9/2010	Houh et al.	
6,738,978 B1	5/2004	Hendricks		7,814,519 B2	10/2010	Rao et al.	
6,754,904 B1 *	6/2004	Cooper .....	G06Q 10/10 348/E7.071	7,831,512 B2	11/2010	Akadiri	
				7,835,920 B2	11/2010	Snyder et al.	
6,760,721 B1	7/2004	Chasen et al.		7,885,963 B2	2/2011	Sanders	
6,766,100 B1	7/2004	Komar et al.		7,900,229 B2	3/2011	Dureau	
6,772,433 B1	8/2004	LaJoie et al.		7,904,924 B1	3/2011	de Heer et al.	
6,774,926 B1	8/2004	Ellis et al.		7,908,626 B2	3/2011	Williamson et al.	
6,804,825 B1	10/2004	White et al.		7,917,933 B2 *	3/2011	Thomas .....	G06F 3/0481 725/88
6,834,110 B1	12/2004	Marconcini et al.					
6,845,396 B1	1/2005	Kanojia et al.		7,921,448 B2	4/2011	Fickle et al.	
6,898,762 B2	5/2005	Ellis et al.		7,925,973 B2	4/2011	Allaire et al.	
6,928,433 B2	8/2005	Goodman et al.		7,926,079 B2	4/2011	Lebar	
6,931,451 B1	8/2005	Logan et al.		7,945,929 B2	5/2011	Knudson et al.	
6,968,364 B1	11/2005	Wong et al.		7,949,722 B1	5/2011	Ullman et al.	
6,976,229 B1	12/2005	Balabanovic et al.		7,950,033 B2	5/2011	Pierre et al.	
6,981,040 B1	12/2005	Konig et al.		7,962,414 B1	6/2011	Allibhoy et al.	
6,985,586 B2	1/2006	Hill		7,974,962 B2	7/2011	Krakirian et al.	
6,990,677 B1	1/2006	Pietraszak et al.		7,987,492 B2 *	7/2011	Liwerant .....	H04M 3/567 725/115
7,020,888 B2	3/2006	Reynolds et al.					
7,028,327 B1	4/2006	Dougherty et al.		7,996,861 B1	8/2011	Delpuch	
7,047,411 B1	5/2006	DeMello et al.		8,006,263 B2	8/2011	Ellis et al.	
7,055,166 B1	5/2006	Logan et al.		8,010,988 B2	8/2011	Cox	
7,055,169 B2	5/2006	Delpuch et al.		8,020,187 B2	9/2011	Cox	
7,058,223 B2	6/2006	Cox		8,042,132 B2 *	10/2011	Carney .....	G06Q 30/02 709/217
7,065,709 B2	6/2006	Ellis					
7,076,734 B2	7/2006	Wolff et al.		8,046,801 B2	10/2011	Ellis et al.	
7,089,309 B2	8/2006	Ramaley et al.		8,051,450 B2	11/2011	Robarts et al.	
7,100,185 B2	8/2006	Bennington et al.		8,090,605 B2	1/2012	Tota et al.	
7,103,905 B2 *	9/2006	Novak .....	H04N 7/17318 348/E7.071	8,107,786 B2	1/2012	Sardera	
				8,112,776 B2	2/2012	Schein et al.	
7,103,906 B1	9/2006	Katz et al.		8,122,034 B2	2/2012	Aravamudan et al.	
7,120,925 B2	10/2006	D'Souza et al.		8,151,290 B1	4/2012	Ujihara	
7,127,735 B1	10/2006	Lee et al.		8,191,098 B2	5/2012	Cooper et al.	
7,155,674 B2	12/2006	Breen et al.		8,205,237 B2	6/2012	Cox	
7,188,355 B1	3/2007	Prokopenko et al.		8,209,337 B2	6/2012	Park	
7,200,575 B2	4/2007	Hans et al.		8,214,254 B1	7/2012	Mowry	
7,213,005 B2	5/2007	Mourad et al.		8,219,446 B1	7/2012	Mowry	
7,222,163 B1 *	5/2007	Girouard .....	G11B 27/28 375/E7.025	8,249,924 B1	8/2012	Mowry	
				8,315,949 B2	11/2012	Akadiri	
7,225,455 B2	5/2007	Bennington et al.		8,332,268 B2	12/2012	Carruthers et al.	
7,231,419 B1	6/2007	Gheorghe et al.		8,340,994 B2	12/2012	Tota et al.	
7,243,139 B2	7/2007	Ullman et al.		8,346,605 B2	1/2013	Krikorian et al.	
7,269,854 B2	9/2007	Simmons et al.		8,365,230 B2	1/2013	Chane et al.	
7,277,870 B2	10/2007	Mourad et al.		8,397,255 B2	3/2013	Wachffogel et al.	
7,305,691 B2	12/2007	Cristofalo		8,434,118 B2 *	4/2013	Gonder .....	H04L 29/06027 725/87
7,308,413 B1	12/2007	Tota et al.					
7,337,462 B2	2/2008	Dudkiewicz et al.		8,464,302 B1	6/2013	Liwerant et al.	
7,367,043 B2 *	4/2008	Dudkiewicz .....	H04N 7/163 725/138	8,473,868 B1	6/2013	Kauffman	
				8,479,246 B2	7/2013	Hudson et al.	
7,386,512 B1	6/2008	Allibhoy et al.		8,566,871 B2	10/2013	Knowles et al.	
7,392,532 B2	6/2008	White et al.		8,621,541 B2	12/2013	Ullman et al.	
7,409,437 B2	8/2008	Ullman et al.		8,635,649 B2	1/2014	Ward, III et al.	
7,421,729 B2	9/2008	Zenoni		8,644,354 B2	2/2014	George et al.	
7,426,558 B1	9/2008	Allibhoy et al.		8,650,125 B2	2/2014	Akadiri	
7,434,244 B2	10/2008	Popov et al.		8,682,794 B2	3/2014	Akadiri	
				8,688,582 B2	4/2014	Akadiri	

## References Cited

2003/0154128	A1	8/2003	Liga	
2003/0154475	A1	8/2003	Rodriguez et al.	
2003/0163375	A1	8/2003	Dombrowski et al.	
2003/0167449	A1	9/2003	Warren	
2003/0167471	A1	9/2003	Roth et al.	
2003/0191816	A1	10/2003	Landress	
2003/0204856	A1	10/2003	Buxton	
2003/0208756	A1	11/2003	Macrae et al.	
2003/0226150	A1	12/2003	Berberet	
2003/0234819	A1	12/2003	Daly	
2004/0015989	A1	1/2004	Kaizu et al.	
2004/0015998	A1	1/2004	Bokor	
2004/0049788	A1	3/2004	Mori et al.	
2004/0073919	A1	4/2004	Gutta et al.	
2004/0076936	A1	4/2004	Horvitz et al.	
2004/0078825	A1	4/2004	Murphy	
2004/0103120	A1*	5/2004	Fickle .....	G06Q 10/10
2004/0117844	A1	6/2004	Karaoguz et al.	
2004/0133918	A1	7/2004	Danker	
2004/0136698	A1	7/2004	Mock	
2004/0148626	A1	7/2004	Sakao et al.	
2004/0158855	A1	8/2004	Gu et al.	
2004/0172419	A1	9/2004	Morris et al.	
2004/0194141	A1	9/2004	Sanders	
2004/0205816	A1	10/2004	Barrett	
2004/0231004	A1	11/2004	Seo	
2004/0268250	A1	12/2004	Danker	
2004/0268413	A1	12/2004	Reid et al.	
2005/0044577	A1	2/2005	Jerding	
2005/0049933	A1	3/2005	Upendran et al.	
2005/0050218	A1	3/2005	Sheldon	
2005/0071328	A1	3/2005	Lawrence	
2005/0081237	A1	4/2005	Chen	
2005/0097600	A1	5/2005	Heer	
2005/0097622	A1	5/2005	Zigmond et al.	
2005/0097623	A1	5/2005	Tecot	
2005/0125307	A1	6/2005	Hunt et al.	
2005/0129049	A1	6/2005	Srinivasan et al.	
2005/0138560	A1	6/2005	Lee et al.	
2005/0149987	A1	7/2005	Boccon-Gibod et al.	
2005/0154679	A1	7/2005	Bielak	
2005/0160458	A1	7/2005	Baumgartner	
2005/0160465	A1	7/2005	Walker	
2005/0166230	A1	7/2005	Gaydou et al.	
2005/0188415	A1	8/2005	Riley	
2005/0193015	A1	9/2005	Logston	
2005/0203918	A1	9/2005	Holbrook	
2005/0204388	A1	9/2005	Knudson et al.	
2005/0210524	A1	9/2005	Dolph	
2005/0216941	A1	9/2005	Flanagan et al.	
2005/0229209	A1	10/2005	Hildebolt et al.	
2005/0235318	A1	10/2005	Grauch et al.	
2005/0235319	A1	10/2005	Carpenter et al.	
2005/0239546	A1	10/2005	Hedrick	
2005/0240961	A1	10/2005	Jerding et al.	
2005/0240968	A1	10/2005	Knudson et al.	
2005/0246752	A1	11/2005	Liwerant et al.	
2005/0267818	A1	12/2005	Kaplan	
2005/0283800	A1	12/2005	Ellis et al.	
2005/0289151	A1	12/2005	Burke	
2006/0004914	A1	1/2006	Kelly et al.	
2006/0015925	A1	1/2006	Logan	
2006/0020662	A1	1/2006	Robinson	
2006/0029093	A1	2/2006	Van Rossum	
2006/0085830	A1	4/2006	Bruck et al.	
2006/0123455	A1	6/2006	Pai	
2006/0155850	A1	7/2006	Ma et al.	
2006/0174260	A1	8/2006	Gutta	
2006/0200556	A1	9/2006	Brave et al.	
2006/0267995	A1	11/2006	Radloff et al.	
2006/0287916	A1	12/2006	Starr et al.	
2007/0016530	A1	1/2007	Stasi et al.	
2007/0038567	A1	2/2007	Allaire et al.	
2007/0039023	A1	2/2007	Kataoka	
2007/0078832	A1	4/2007	Ott, IV et al.	
2007/0157221	A1	7/2007	Ou et al.	
2007/0157249	A1	7/2007	Cordray et al.	
2007/0198532	A1*	8/2007	Krikorian .....	G06Q 30/0273

(56)

**References Cited****U.S. PATENT DOCUMENTS**

2007/0214482	A1	9/2007	Nguyen
2007/0245399	A1	10/2007	Espelien
2007/0250864	A1	10/2007	Diaz Perez
2008/0022298	A1	1/2008	Cavicchia
2008/0072260	A1	3/2008	Rosin et al.
2008/0127257	A1	5/2008	Kvache
2008/0141325	A1	6/2008	Ludvig
2008/0148317	A1	6/2008	Opaluch
2008/0155613	A1	6/2008	Benya et al.
2008/0163292	A1	7/2008	Stallworth
2008/0163330	A1	7/2008	Sparrell
2008/0189749	A1	8/2008	White et al.
2008/0222687	A1	9/2008	Edry
2008/0276277	A1	11/2008	Ahn et al.
2009/0158334	A1	6/2009	Rodriguez et al.
2010/0138863	A1	6/2010	Diaz Perez
2010/0153999	A1	6/2010	Yates
2010/0175090	A1	7/2010	Cordray
2010/0211975	A1	8/2010	Boyer et al.
2010/0319040	A1	12/2010	Diaz Perez
2010/0325655	A1	12/2010	Diaz Perez
2011/0030012	A1	2/2011	Diaz Perez
2011/0030013	A1	2/2011	Diaz Perez
2011/0166918	A1	7/2011	Allaire et al.
2011/0191163	A1	8/2011	Allaire et al.
2013/0125158	A1	5/2013	Brown
2013/0254804	A1	9/2013	Diaz Perez
2013/0254809	A1	9/2013	Diaz Perez
2013/0254814	A1	9/2013	Diaz Perez
2014/0344859	A1	11/2014	Krikorian et al.
2015/0128192	A1	5/2015	Diaz Perez
2015/0237403	A1	8/2015	Diaz Perez
2015/0245099	A1	8/2015	Diaz Perez
2015/0264440	A1	9/2015	Diaz Perez
2015/0281792	A1	10/2015	Gaydou et al.
2015/0358649	A1	12/2015	Diaz Perez
2015/0358682	A1	12/2015	Diaz Perez
2015/0358683	A1	12/2015	Diaz Perez
2016/0094870	A1	3/2016	Drope
2017/0295387	A1	10/2017	Akadiri

**FOREIGN PATENT DOCUMENTS**

JP	07-284035	10/1995
JP	H9-102827	A 4/1997
JP	H10-155131	A 6/1998
JP	11-150692	6/1999
JP	03-116121	4/2003
WO	89/12896	A1 12/1989
WO	90/15507	A1 12/1990
WO	9406084	A1 3/1994
WO	97/18636	A2 5/1997
WO	98/10589	A1 3/1998
WO	99/10822	A1 3/1999
WO	99/41684	A1 8/1999
WO	9950778	A1 10/1999
WO	01/010124	A1 2/2001
WO	01/10127	A1 2/2001
WO	WO01022688	3/2001
WO	WO01038960	5/2001
WO	2002008948	A2 1/2002
WO	03/052572	A1 6/2003
WO	WO03052572	6/2003
WO	WO03069457	8/2003
WO	WO 2007/021974	A2 2/2007

**OTHER PUBLICATIONS**

TimeWarner, Time Warner Cable Launches Quick Clips, <http://www.timewarner.com/newsroom/press-releases/2006/09/28/time-warner-cable-launches-quick-clips> (published Sep. 28, 2006, last visited Jun. 26, 2015).

Time Warner Cable, Photos & Video Go from Digital Cameras to Television with Free, New Time Warner Cable Product, [http://www.timewarnercable.com/en/about-us/press/photos\\_video\\_go\\_fromdigitalcamerastotelevisionwithfreenewtimewar.html](http://www.timewarnercable.com/en/about-us/press/photos_video_go_fromdigitalcamerastotelevisionwithfreenewtimewar.html) (published Apr. 27, 2007, last visited Jun. 26, 2015).

Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (5 pgs).

Memorandum in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474-1), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (49 pgs).

Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 475), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (12 pgs).

Declaration of Nathan L. Brown (ECF 475-1), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (6 pgs).

Exhibits 1 (ECF 475-2), 4 (ECF 475-5), 5 (ECF 475-6), and 6 (ECF 475-7) to Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (133 pgs).

Plaintiff's Opposition to Defendants Time Warner Cable, Inc. and Oceanic Time Warner Cable, LLC's Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 561), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (52 pgs).

Plaintiff Broadband iTV, Inc.'s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.'s Concise Statement of Facts (ECF 562), *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Declaration of Keith A. Jones (ECF 562-1), Inc.'s Concise Statement of Facts, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Exhibits 1-10 (ECF 562-2-ECF-11), 12 (ECF 562-13), 14 (ECF 562-15), 16-17 (ECF 562-17-562-18), and 19-20 (ECF 562-20-562-21) to Plaintiff Broadband iTV, Inc.'s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.'s Concise Statement of Facts, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (508 pgs).

Order Granting in Part and Denying in Part Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Sep. 29, 2015) (77 pgs).

Judgment, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, No. 15-00131 (D. Haw. Oct. 9, 2015) (4 pgs).

Order Granting Defendant Hawaiian Telcom, Inc.'s Motion for Summary Judgment of Invalidity Under 35 U.S.C. § 101, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, No. 14-00169 (D. Haw. Sep. 29, 2015) (43 pgs).

Judgment, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, No. 14-00169 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc.*, No. 14-00169 (D. Haw. Oct. 9, 2015) (4 pgs).

Brief of Amici Curiae Broadband iTV, Inc., Double Rock Corporation, Island Intellectual Property, LLC, Access Control Advantage, Inc., and Fairway Financial U.S., Inc. In Support of Appellants, *Nefflix, Inc. v. Rovi Corporation et al.*, No. 2015-1917 (Fed. Cir. Dec. 18, 2015).

(56)

**References Cited****OTHER PUBLICATIONS**

Consolidated Brief for Appellant Broadband iTV, Inc., *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 21, 2016).

Amicus Brief of United Inventors Association of the United States of America in Support of Appellant Broadband iTV, Inc. and Reversal, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 27, 2016).

Amicus Brief by Tranxition, Inc., *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 16-1082 (Fed. Cir. Jan. 28, 2016).

EPO Communication for European Application No. 08726793.6, dated May 30, 2016.

EPO Communication for European Application No. 08768802.4, dated May 30, 2016.

VDO expands Webcasting possibilities, *Broadcasting & Cable*, Nov. 11, 1996.

Jose Alvear, "Web Developer.com Guide to Streaming Multimedia", Chapters 9 and 11, 1998.

Business Wire, "Ivex Announces ViewOps Internet Video Service; Allows Business Managers to View and Manage Operations Online," May 2, 2000.

Notice of Entry of Judgment Without Opinion for Case No. 2016-1082 of the United States Court of Appeals for the Federal Circuit dated Sep. 26, 2016.

Judgment, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc., Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.*, Nos. 2016-1082, 2016-1083 (CAFC Sep. 26, 2016) (2 pgs).

Affidavit of Milton Diaz Perez Under 37 C.F.R. 132, Jan. 20, 2012, submitted in U.S. Appl. No. 11/768,895.

*Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*; BBiTV Petition for a Writ of Certiorari (Sup. Ct. Apr. 13, 2017 (No. 16-1241)).

Order List 581 U.S. Sup. Ct.—Monday, May 22, 2017—*Broadband iTV, Inc. v. Hawaiian Telcom, Inc., et al.*, Petition for Writ of Certiorari Denied (p. 7).

Ciciora, Farmer, & Large, *Modern Cable Television Technology* (Morgan Kaufmann Publishers, Inc. 1999), 18 pages.

International Search Report, dated Mar. 6, 2006, in PCT International Application US2005/027376, of Broadband iTV, Inc.

International Search Report, dated Sep. 15, 2009, in PCT International Application US2008/003341, of Broadband iTV, Inc.

International Search Report, dated Nov. 28, 2008, in PCT International Application US2008/007980, of Broadband iTV, Inc.

The Industry Standard, "Web Entertainment Gets Personal", Jan. 10, 2000, [www.thestandard.com](http://www.thestandard.com).

Affidavit of Milton Diaz Perez Under C.F.R. 132, Mar. 9, 2009, submitted in U.S. Appl. No. 10/909,192, filed Jul. 3, 2004.

Affidavit of Milton Diaz Perez, Ex. A, Wikipedia, "Cable Television in the United States", history, last modified Jan. 17, 2009, pp. 1-7, [http://en.wikipedia.org/wiki/Cable\\_Television\\_in\\_the\\_United\\_States](http://en.wikipedia.org/wiki/Cable_Television_in_the_United_States).

Affidavit of Milton Diaz Perez, Ex. B, Wikipedia, "Internet Television", history, last modified Feb. 5, 2009, pp. 1-4, [http://en.wikipedia.org/wiki/Internet\\_TV](http://en.wikipedia.org/wiki/Internet_TV).

Affidavit of Milton Diaz Perez, Ex. C, Wikipedia, "Content Delivery Network", history, last modified Feb. 10, 2009, pp. 1-6, [http://en.wikipedia.org/wiki/Content\\_Delivery\\_Network](http://en.wikipedia.org/wiki/Content_Delivery_Network).

Affidavit of Milton Diaz Perez, Ex. D, Wikipedia, "Walled Garden (technology)", history, last modified Feb. 3, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/Walled\\_Garden\\_\(technology\)](http://en.wikipedia.org/wiki/Walled_Garden_(technology)).

Affidavit of Milton Diaz Perez, Ex. E, Wikipedia, "User-generated TV", history, last modified Feb. 10, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/User-generated\\_TV](http://en.wikipedia.org/wiki/User-generated_TV).

Affidavit of Milton Diaz Perez, Ex. E1, Wikipedia, "ZeD", history, last modified Jan. 5, 2009, pp. 1-7, <http://en.wikipedia.org/wiki/Zed>.

Affidavit of Milton Diaz Perez, Ex. E2, Wikipedia, "Current TV", history, last modified Feb. 5, 2009, pp. 1-5, [http://en.wikipedia.org/wiki/Current\\_TV](http://en.wikipedia.org/wiki/Current_TV).

Affidavit of Milton Diaz Perez, Ex. E3, outloud.tv, tripatlas, circa 2003, <http://tripatlas.com/Outloud.tv>.

VOD Metadata—Project Primer, Overview of VOD Content Specification 1.0, 1.1, and 2.0, published by Cable Labs, circa 2002-2007, <http://www.cablelabs.com/projects/metadata/primer>.

XOD Capsule, issue dated Apr. 11, 2006, includes article "Bresnan Taps CMC for VOD", published by Communications, Engineering & Design Magazine, <http://www.cedmagazine.com/newsletter.aspx?id=67468>.

Comcast Media Center, Content Gateway, Content Distribution website, circa 2010, <http://www.comcastmediacenter.com/content-gateway>.

Petition for Inter Partes Review, IPR2014-01222, *Unified Patents, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Petition for Covered Business Method Review, CBM2014-00189, *Hawaiian Telcom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Patent Owner's Preliminary Response, Jan. 2, 2015, CBM2014-00189, *Hawaiian Telcom, Inc. v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Decision Denying Institution of Inter Partes Review, Jan. 5, 2015, IPR2014-01222, *Unified Patents v. Broadband iTV, Inc.*, re U.S. Pat. No. 7,631,336.

Adams, *Open Cable Architecture* (Cisco Press 2000), Chapter 8-16. ATSC Standard: Program and System Information Protocol for Terrestrial Broadcast and Cable (PSIP) (Dec. 23, 1997).

Attack of the \$500 Killer Network Computers: Time-Warner Cable's Full Service Network, *Network Computing* (Aug. 19, 2000) Internet Archive, <https://web.archive.org/web/20000819050301/http://www.networkcomputing.com/616/616tw.html>.

CableLabs Video-On-Demand Asset Distribution Interface Specification, Version 1.1 (Sep. 27, 2002).

CableLabs Video-On-Demand Content Specification Version 1.1 (Jan. 7, 2004).

Declaration of Milton Diaz Perez, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Mar. 2, 2015).

Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit A, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit B, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit C, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit E, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit F, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit G, Defendants' Joint Preliminary Invalidity Contentions, *Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.*, No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Fickle et al., U.S. Appl. No. 60/429,966, (filed Nov. 27, 2002).

Full Service Network and The Orlando Sentinel add interactive dining guide to GOtv, The Free Library, <http://www.thefreelibrary.com/Full+Service+Network+and+The+Orlando+Sentinel+add+interactive+dining+...+a018299720> (published May 20, 1996, last visited Mar. 4, 2015).

Full Service Network(FSN) in Orlando, Florida, Hong Kong University of Science and Technology (May 4, 1997) Internet Archive, <https://web.archive.org/web/19970504203603/http://www.ust.hk/~webiway/content/USA/Trial/fsn.html>.

Full Service Network, Time Warner Cable, <http://m.history.timewarnercable.com/the-twc-story/era-1990-1995/Story.aspx?story=56> (last visited Mar. 4, 2015).

Full Service Network, Wikipedia, [http://en.wikipedia.org/w/index.php?title=Full\\_Service\\_Network&printable=yes](http://en.wikipedia.org/w/index.php?title=Full_Service_Network&printable=yes) (last visited Mar. 4, 2015).

(56)

**References Cited****OTHER PUBLICATIONS**

Tanenbaum, Computer Networks, 4th ed. (Prentice Hall PTR 2003), pp. 1-14.

Time Warner Cable, DRAFT Asset Distribution System ("Catcher's Mitt") Functional Requirements, Version 1.0 (Jan. 26, 2000).

Time Warner Cable, ISA Data Download Delivery, Version 0.5 (Jun. 3, 2004).

Time Warner Cable, Pegasus Interactive Services Architecture, Version 1.4 (Jun. 5, 2003).

Time Warner Cable, The ISA Tutorial, Version 1.0 (Sep. 13, 2003).

Time Warner Cable's Full Service Network connects live to Innovations, AllBusiness (published Apr. 10, 1996, archived Mar. 25, 2008) Internet Archive, <https://web.archive.org/web/20080325024937/http://www.allbusiness.com/media-telecommunications/telecommunications/7218809-1.html>.

Time Warner introduces world's first full service network in Orlando; Network offers First . . . , AllBusiness (published Dec. 14, 1994, archived May 22, 2009) Internet Archive, <https://web.archive.org/web/20090522134441/http://www.allbusiness.com/media-telecommunications/telecommunications/7087127-1.html>.

Time Warner will close its Full Service Network, Orlando Business Journal, <http://www.bizjournals.com/orlando/stories/1997/04/28/daily7.html> (last visited Mar. 4, 2015).

Time Warner's 'Time Machine' for Future Video, The New York Times, <http://www.nytimes.com/.../12/business/time-warner-s-time-machine-for-future-video.html?pagewanted=2&pagewanted=print> (published Dec. 12, 1994, last visited Mar. 4, 2015).

Time Warner Cable, Request for Proposal and Functional Requirements Specification for Video-On-Demand (VOD) Systems, Version 2.0 (Apr. 25, 1997).

Time Warner Cable, Pegasus Movies on Demand Content Specification, Version 1.3 (Sep. 29, 2000).

Time Warner Cable, Pegasus Overall Flow: Movie Delivery, Version 1.0 (Feb. 18, 2004).

If You Liked This, You're Sure to Love That, by Clive Thompson (Nov. 21, 2008), The New York Times Magazine, [https://www.nytimes.com/2008/11/23/magazine/23Netflix-t.html?\\_r=2&hp=&pagewanted=all](https://www.nytimes.com/2008/11/23/magazine/23Netflix-t.html?_r=2&hp=&pagewanted=all), Internet.

Two Decades of Recommender Systems at Amazon.com, Brent Smith (Amazon.com) and Greg Linder (Microsoft) Published by the IEEE Computer Society, <https://pdfs.semanticscholar.org/0f06/d328f6deb44e5e67408e0c16a8c7356330d1.pdf>, Internet.

Evaluating Collaborative Filtering Recommender Systems, Jonathan L. Herlocker (Oregon State University) and Joseph A. Konstan, Loren G. Terveen, and John T. Riedl (University of Minnesota) ACM Transactions on Information Systems, vol. 22, No. 1, Jan. 2004, pp. 5-53.

Netflix Prize: Forum, <http://www.netflixprize.com/community/> (Mar. 6, 2007) Internet Archive, <https://web.archive.org/web/20070306011355/http://www.netflixprize.com:80/community/>.

Netflix Prize, The Netflix Prize Rules, <http://www.netflixprize.com/rules> (Mar. 6, 2007) Internet Archive, <https://web.archive.org/web/20070306011304/http://www.netflixprize.com/rules>.

Netflix Prize: Home; <https://web.archive.org/web/20070306011244/http://www.netflixprize.com:80/index>.

\* cited by examiner

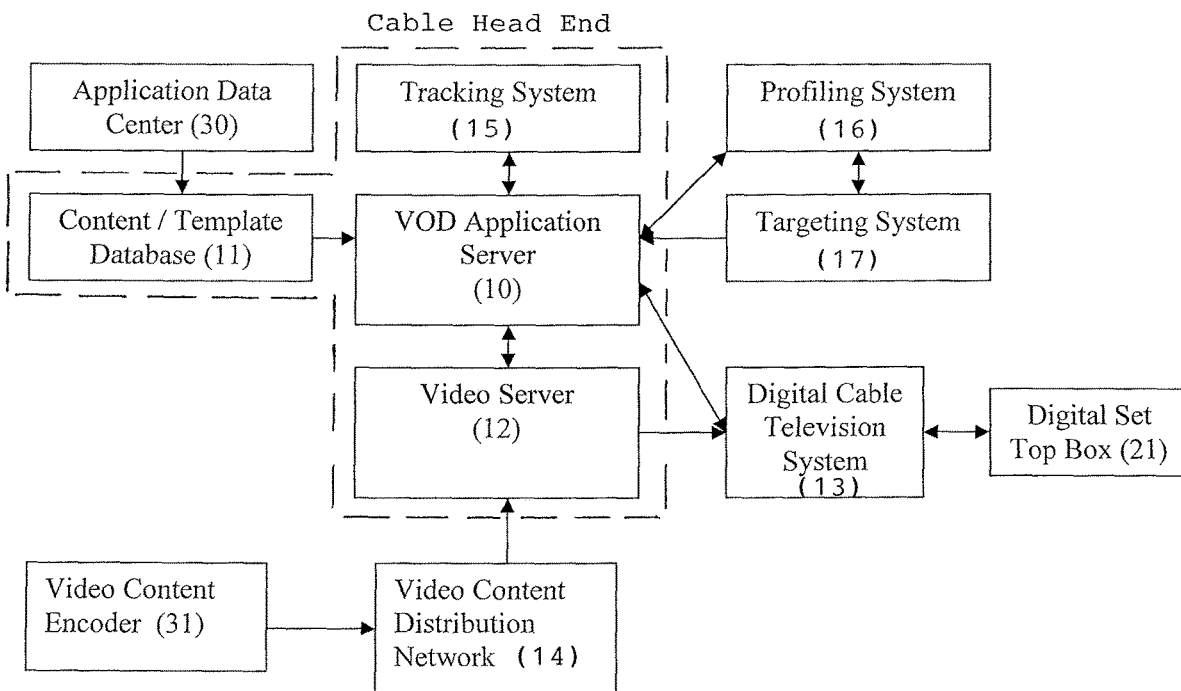


Figure 1A: VOD Content Delivery System, Overall Architecture

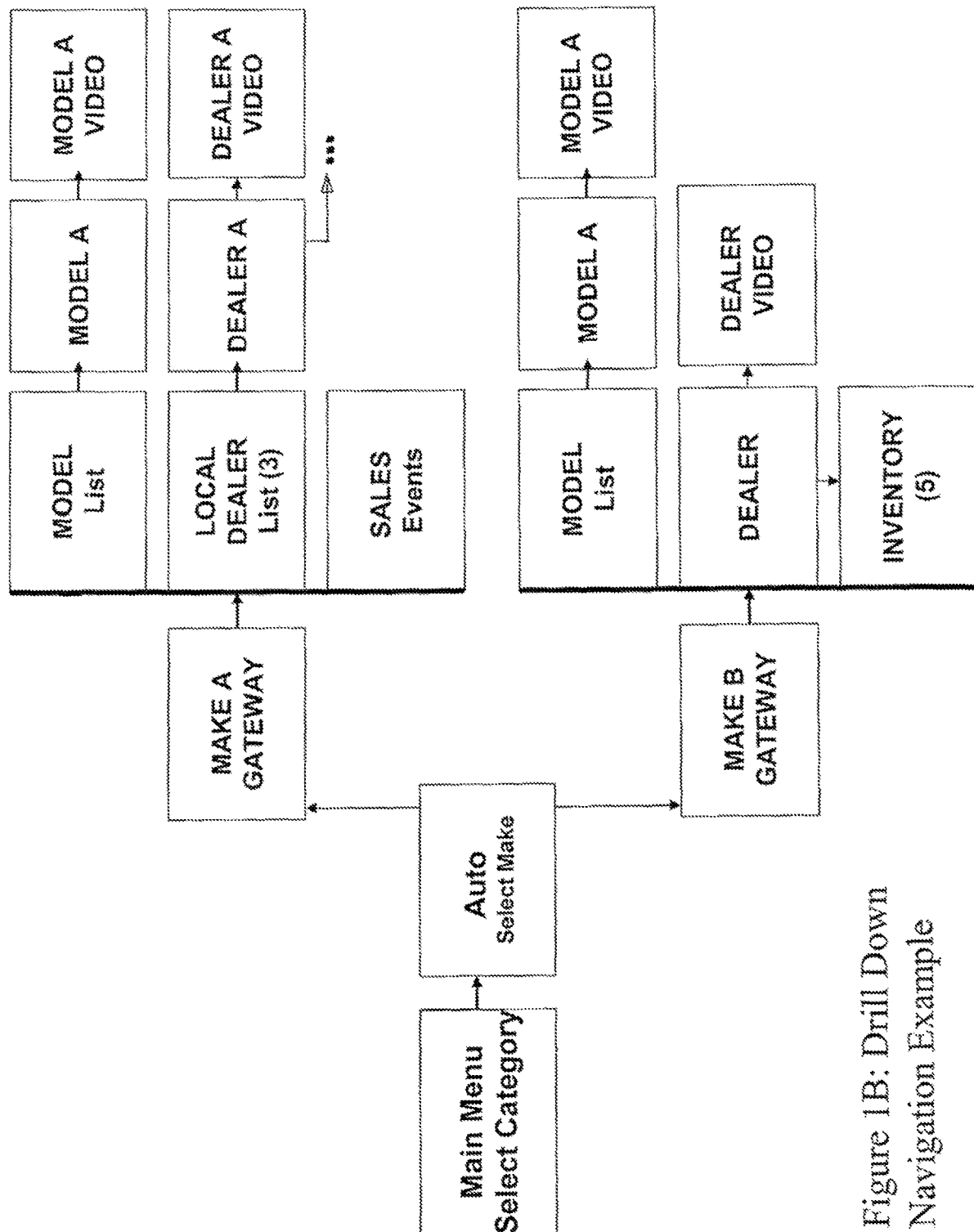
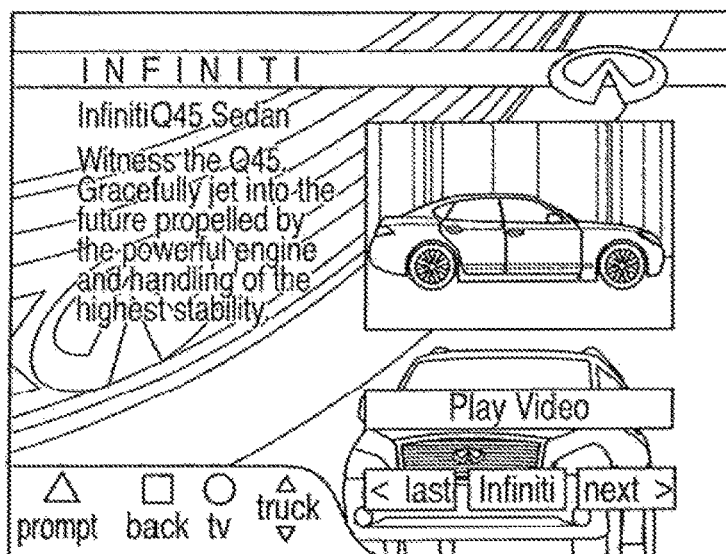


Figure 1B: Drill Down Navigation Example





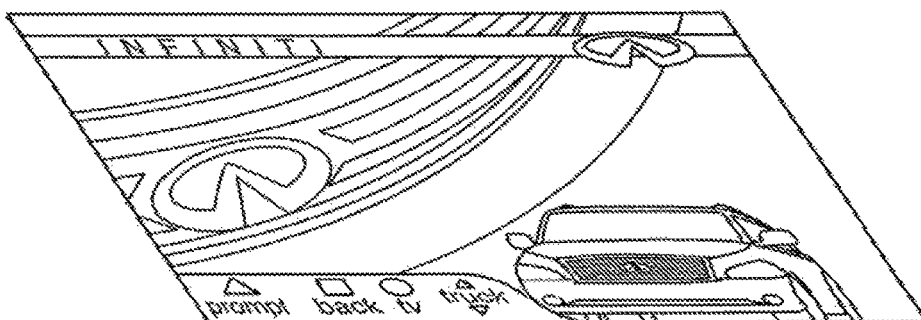
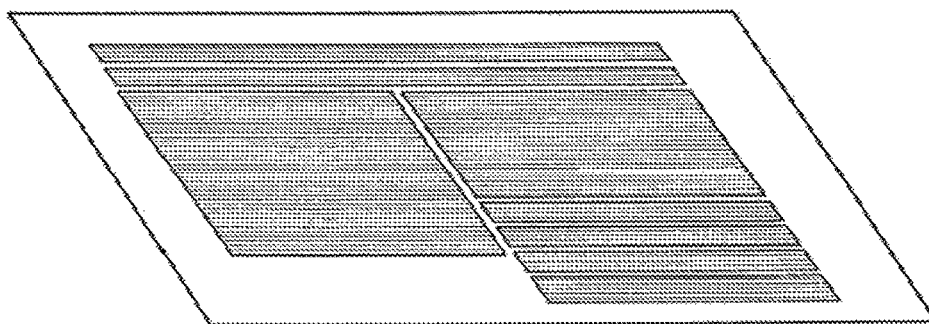
Infiniti Q45 Sedan  
Witness the Q45.  
Gracefully jet into the  
future propelled by  
the powerful engine  
and handling of the  
highest stability.



Play Video

< last Infiniti next >

FIG. 10C



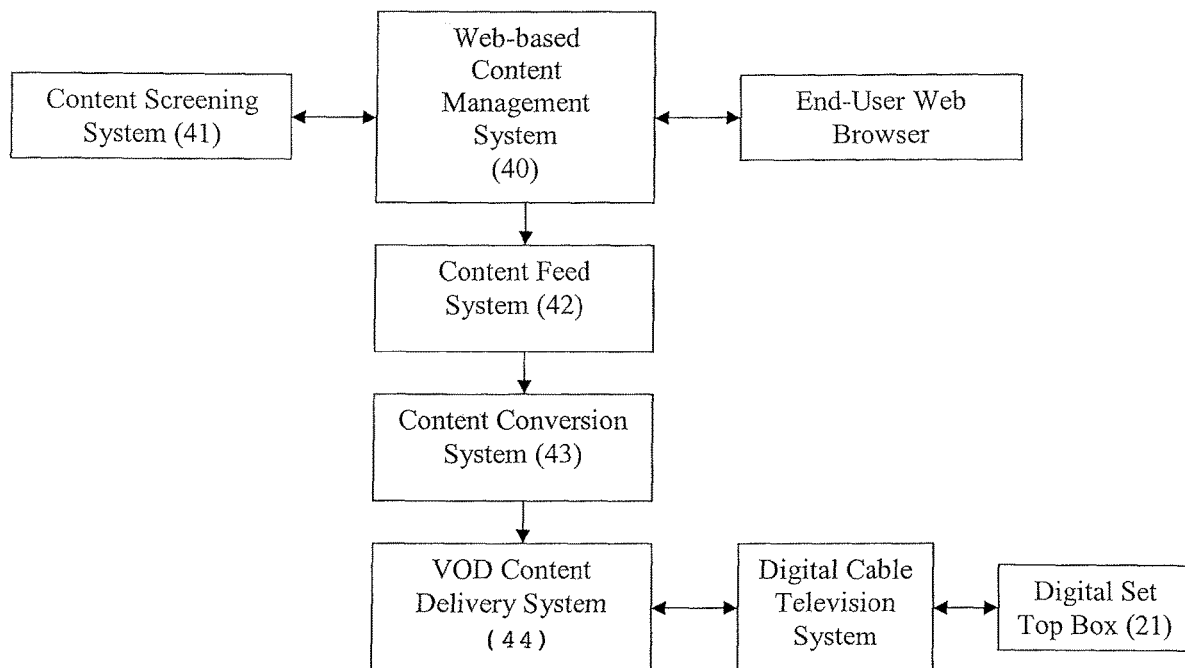


Figure 2A: Classified Ad System, Overall Architecture

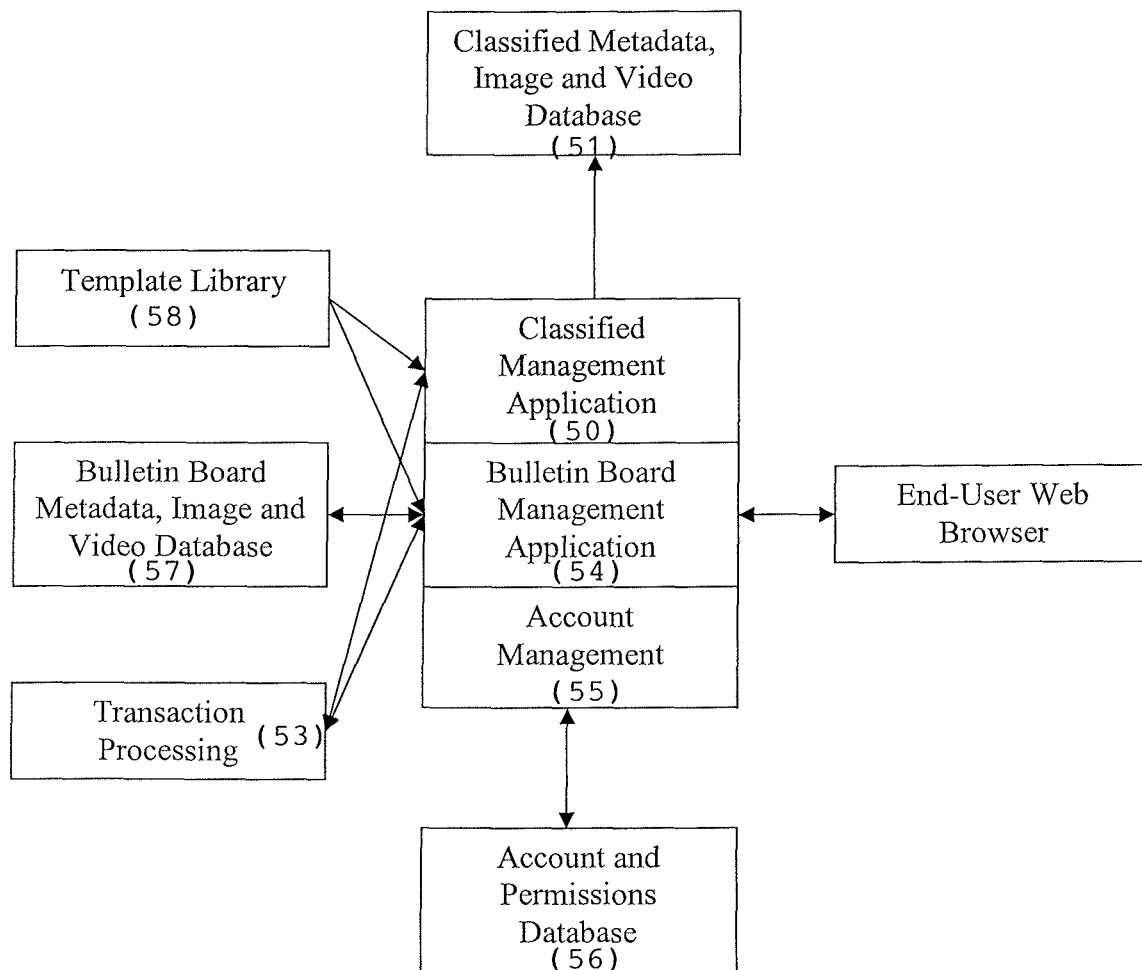


Figure 2B: Web-based Content Management System

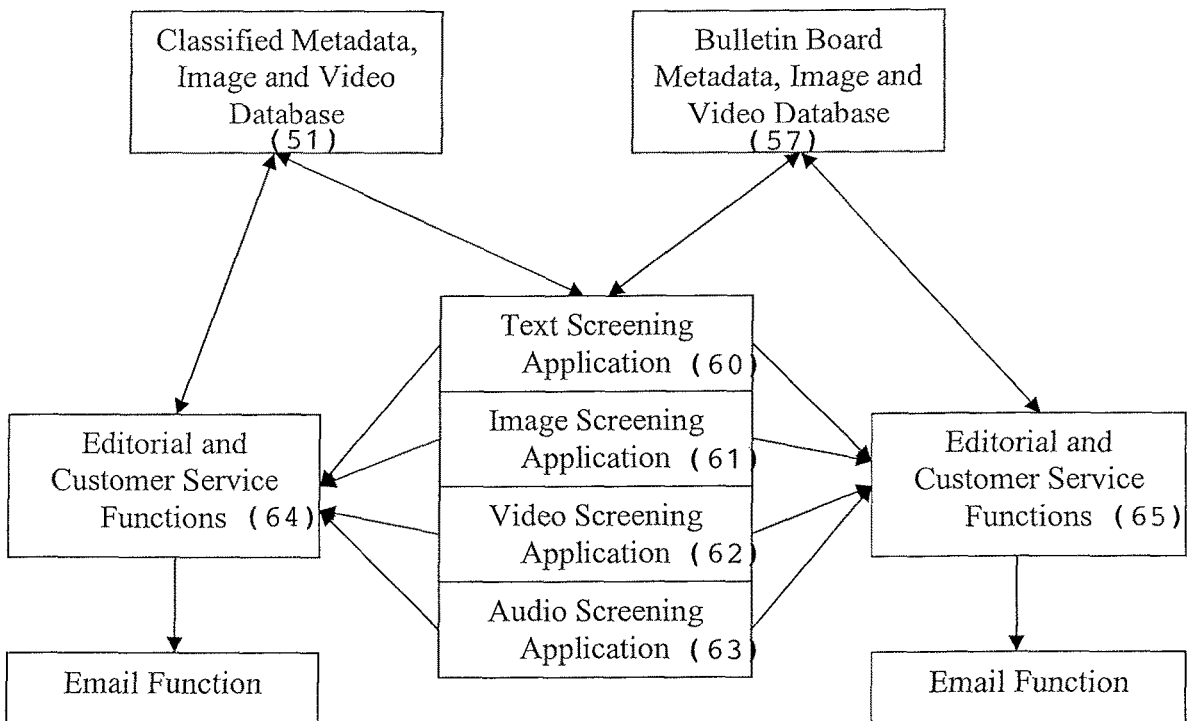


Figure 2C: Content Screening System

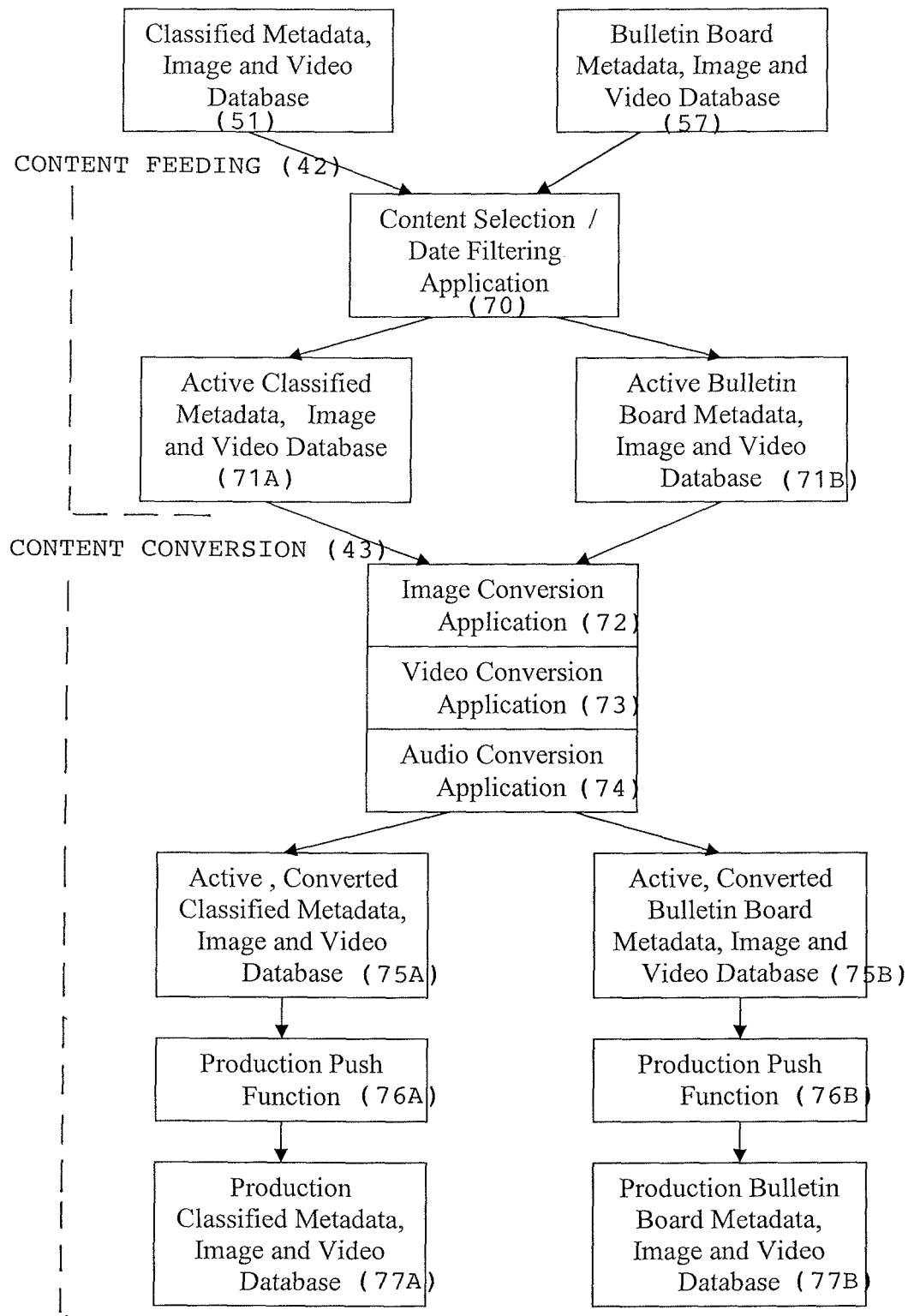


Figure 2D: Content Feed and Conversion System

**VIDEO-ON-DEMAND CONTENT DELIVERY  
SYSTEM FOR PROVIDING  
VIDEO-ON-DEMAND SERVICES TO TV  
SERVICE SUBSCRIBERS**

**CROSS-REFERENCE TO RELATED  
APPLICATIONS**

This U.S. Patent Application is a continuation application and claims the benefit of co-pending U.S. patent application Ser. No. 15/999,559, filed on Aug. 20, 2018, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", which is a continuation application of U.S. patent application Ser. No. 15/864,502, filed Jan. 8, 2018, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 10,057,649 on Aug. 21, 2018, which is a continuation application of U.S. patent application Ser. No. 15/582,155, filed on Apr. 28, 2017, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 9,866,909 on Jan. 9, 2018, which is a continuation application of U.S. patent application Ser. No. 15/190,954, filed on Jun. 23, 2016, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY METHOD FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 9,641,896 on May 2, 2017, which is a continuation application of U.S. patent application Ser. No. 14/978,881, filed on Dec. 22, 2015, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 9,386,340 on Jul. 5, 2016, which is a continuation application of U.S. patent application Ser. No. 14/703,597, filed on May 4, 2015, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 9,232,275 on Jan. 5, 2016, which is a continuation application of U.S. patent application Ser. No. 12/852,663, filed on Aug. 9, 2010, of the same inventor and entitled "SYSTEM FOR ADDING OR UPDATING VIDEO CONTENT FROM INTERNET SOURCES TO EXISTING VIDEO-ON-DEMAND APPLICATION OF A DIGITAL TV SERVICES PROVIDER SYSTEM", issued as U.S. Pat. No. 9,078,016 on Jul. 7, 2015, which is a divisional application of U.S. patent application Ser. No. 11/952,552, filed on Dec. 7, 2007, of the same inventor and entitled "SYSTEM FOR MANAGING, CONVERTING, AND TRANSMITTING VIDEO CONTENT FOR UPLOADING ONLINE TO A DIGITAL TV SERVICES PROVIDER SYSTEM", issued as U.S. Pat. No. 7,774,819 on Aug. 10, 2010, which is a divisional application of U.S. patent application Ser. No. 10/909,192, filed on Jul. 30, 2004, of the same inventor and entitled "SYSTEM AND METHOD FOR MANAGING, CONVERTING AND DISPLAYING VIDEO CONTENT ON A VIDEO-ON-DEMAND PLATFORM, INCLUDING ADS USED FOR DRILL-DOWN NAVIGATION AND CONSUMER-GENERATED CLASSIFIED ADS", issued as U.S. Pat. No. 7,590,997 on Sep. 15, 2009, each of which is hereby incorporated by reference as if fully set forth herein.

**TECHNICAL FIELD**

This invention generally relates to the provision of interactive television services through cable TV infrastructure, and more particularly, to a system and method for managing, converting and displaying video content on a video-on-demand platform, and particularly, advertising displays used for drill-down navigation and displays of consumer-generated classified ads on TV.

**BACKGROUND OF INVENTION**

Cable television (CATV) systems are used to deliver television services to a vast majority of TV-viewing homes in the U.S. and other technologically advanced countries. The typical CATV system has a cable service provider head end equipped with video servers to transmit CATV program signals through distribution lines to local nodes and from there to TV subscriber homes. Within the subscriber homes, the CATV program signals are transmitted to one or more customer-premises TVs which are coupled to external set-top boxes for channel tuning or are equipped with internal cable channel tuners.

Current CATV set-top boxes provide various functions for channel switching and program access between subscribers and the CATV head end. The more advanced digital set-top boxes are individually addressable from the CATV head end, and also allow subscribers to input via remote control units their selection inputs for transmission on a back channel of the connecting cable to the CATV head end, thereby enabling subscribers to access interactive television services and other types of advanced digital TV services. A primary type of interactive television system is referred to generally as a "video-on-demand" (VOD) system, wherein a viewer can enter a selection choice for a video program via the remote control unit to the set-top box and have the desired video program delivered instantaneously for display on the TV. Such VOD applications can include on-demand movies, documentaries, historic sports events, TV programs, commercials, advertisements, music videos, short-subjects, and even individual screen displays of information. VOD-based interactive television services generally allow a viewer to use the remote control to cursor through an on-screen menu and select from a variety of titles for stored video programs for individual viewing on demand. Advanced remote control units include button controls with VCR-like functions that enable the viewer to start, stop, pause, rewind, or replay a selected video program or segment. In the future, VOD-based interactive television services may be integrated with or delivered with other advanced interactive television services, such as webpage browsing, e-mail, television purchase ("t-commerce") transactions, and multimedia delivery.

With the increasing interactive functionality and customer reach of interactive television services, advertisers and content providers are finding it increasingly attractive to employ on-demand advertising, program content, and TV transactions for home viewers. VOD content delivery platforms are being designed to seamlessly and conveniently deliver a wide range of types of advertising, content, and transaction services on demand to home viewers. An example of an advanced VOD delivery platform is the N-Band<sup>TM</sup> system offered by Navic Systems, Inc., d/b/a Navic Networks, of Needham, Mass. This is an integrated system which provides an application development platform for third party application developers to develop new VOD service applications, viewer interfaces, and ancillary interactive services

for deployment on VOD channels of CATV operators in cable service areas throughout the U.S. A detailed description of the Navic N-Band system is contained in U.S. Patent Application 2002/066,106, filed on May 30, 2002, which is incorporated herein by reference.

Advanced digital set-top boxes also have the ability to collect data such as a log of channels tuned to and programs watched by the viewer. The set top box can be designed to collect and report this data automatically to the cable head end. At the head end location, the viewer data can be aggregated over many users with personally identifying data removed, and provided to advertisers and program sponsors for information in designing and targeting new ads and programs for viewer preferences, thereby resulting in increased viewership, higher viewer impressions per ad or program, and ultimately increased revenues.

Current VOD ads and program offerings are generally produced for mass audiences. It would be particularly desirable to adapt a VOD delivery platform to deliver ads, promotions, programs, and informational content by allowing viewers to navigate readily and visually to specific items of interest. Such visual navigation for content delivery would be more likely to create a satisfying viewer experience, and also to engage individual viewers in on-demand TV services and transactions. It would also be a particularly desirable to adapt a VOD delivery platform to receive uploads of user ads from individuals such as through an online network for search, navigation, and display to TV subscribers.

#### SUMMARY OF THE INVENTION

In accordance with a first objective of the present invention, a video-on-demand (VOD) content delivery system for delivery templated VOD content comprises:

(a) a VOD Application Server located at a Cable Head End which manages a Database of templates for generating templated VOD content in response to requests for specific video content elements by viewer request signals transmitted from the TV equipment of a viewer to the Cable Head End;

(b) a Video Server for storing video content encoded as video content elements and for supplying a requested video content element in response to the VOD Application Server for delivery to the TV equipment of the viewer; and

(c) an Application Data Center for creating and storing a plurality of different templates ordered in a hierarchy for presentation of video content elements of different selected types categorized in hierarchical order, wherein a template for display of a video content element in a higher level of the hierarchy includes a link to one or more templates and video content elements in a lower level of the hierarchy, said plurality of hierarchically-ordered templates and links being stored in the Database managed by the VOD Application Server, and

(d) wherein said VOD Application Server, in response to viewer request for a selected video content element of a higher order in the hierarchy, retrieves the corresponding template from said Database and corresponding video content element from said Video Server to provide a templated VOD content display on the viewer's TV equipment which includes one or more links to video content elements in a lower order of hierarchy, and upon viewer request selecting a link displayed in the templated VOD content to a video content element in the lower order of hierarchy, retrieves the corresponding template and video content element of lower order hierarchy for display on the viewer's TV equipment,

thereby enabling the viewer to use drill-down navigation through TV displays of templated VOD content.

In a preferred embodiment of the templated VOD content delivery system, the system employs the templated content delivery to create a User Interface for the viewer to navigate through progressively more specific template (display ad) types linked in series to reach an end subject of interest to the viewer. Referred to herein as "Drill-Down Ads," the series of progressively more specific display ad types allow the subscriber to navigate to an end subject of interest while at the same time having a unique visual experience of moving visually through a series of ads mirroring the viewer's path to the end subject of interest.

As an example involving automobile advertising, the User Interface can provide a hierarchical ordering of video display ads that starts with an Auto Maker's ad displayed with links to Model ads. The viewer can select using the remote control unit a specific Model ad which is displayed with links to more specific levels of ads, such as "Custom Packages", "Feature/Options", or "Color/Styling", etc., until it reaches an end subject of interest to the subscriber. The viewer would thus be able to navigate to specific content of interest while traversing through video ad displays of the Auto Maker, Models, Model A, Features, etc. Similarly, the viewer can navigate to specific content of interest while traversing through video ad displays of Local Dealers, Dealer A, Current Sales Promotions, etc. The templated VOD ads are generated dynamically by searching the VOD Application database with each current request by a viewer. This enables the system to dynamically generate and display updated advertising content that remains current. For example, if the Auto Maker changes the Model types available, or if Local Dealer A changes its current sales promotions, that advertiser's ads can be updated with new content and selection options on the system database, and the new templated ads can be generated dynamically, instead of new ads having to be filmed, produced, contracted, and installed with the cable TV company. Many other types of ads, subjects, and other interactive TV applications can be enabled with the use of the Drill-Down Navigation method. The selections or preferences exhibited by viewer navigation paths through the Drill-Down Navigation can also be tracked, profiled, and/or targeted as feedback data to advertisers for fine-tuning Drill-Down ad designs.

In accordance with a second objective of the invention, a video-on-demand (VOD) content delivery system for managing, converting and displaying consumer-generated classified ads on TV comprises:

(a) a Content Management Website for enabling individual users to upload classified ad content on an online network connection from their remote computers, said uploaded classified ad content including associated meta data for identifying the ad content by title and topical area;

(b) a Content Screening Component for receiving the classified ad content uploaded to the Content Management Website and screening the content for objectionable text, audio, video and/or images in the content, and for rejecting said content if objectionable text, audio, video and/or images are found;

(c) a Content Feed Component for automatically transferring the classified ad content screened by the Content Screening Component with the associated meta data and supplying them to a Content Conversion Component;

(d) a Content Conversion Component for automatically converting the transferred classified ad content supplied from the Content Feed Component into a video data format compatible with the VOD content delivery system, and for

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automatically indexing the converted classified ad content in a Video Server database according to title and topical area as specified in the content meta data; and

(e) a VOD Application Server, operatively connected between said Content Conversion Component and a Cable Head End connected via cable connection to the TV equipment of viewers, for delivering from the Cable Head End classified ad title and topical area listings data generated from the meta data for the classified ad content to be displayed on the TV equipment of viewers to enable their searching for classified ads of interest and, in response to a viewer request signal requesting a specific classified ad of interest transmitted via the TV equipment to the Cable Head End, for retrieving the requested classified ad from the Video Server database and transmitting it to be displayed to the viewer on their TV equipment.

In a preferred embodiment of the TV classified ads system, individual users can upload classified ad content via their web browser, including text, audio, video and/or image files in industry-standard file formats, to the Content Management Website. The Content Screening Component is configured to parse the input for objectionable text words in text files, detect objectionable audio words in audio files, and optically recognize objectionable images in graphics or video files. The Content Feed Component automatically transmits classified ad content that has been appropriately contracted for display (paid for, and within the contracted time period) to the Content Conversion Component and the Video Server database. The VOD Application Server responds to requests input by viewers via remote control and retrieves the requested classified ads indexed by their titles and topical areas from the Video Server database to be displayed on the viewer's TV. The Content Management Website can also include functions for: (a) Account Management of user transaction accounts; (b) Content Classification to facilitate user designation of titles and topical areas to uniquely and attractively identify their classified ads; (c) Bulletin Board for creation and management of consumer-generated content related to announcements and other items of general interest to be displayed to viewers in subsidiary displays; and (d) Transaction Processing for the processing the payment of user fees, changes, and refunds in the use of the system.

The foregoing and other objects, features and advantages of the invention are described in further detail below in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1A is a diagram of an overall architecture for a VOD Content Delivery System in accordance with the present invention, FIG. 1B shows an example of Drill-Down Ad navigation, and FIG. 1C shows an example of the templated ad display model.

FIG. 2A is a process flow diagram of the overall architecture of a consumer generated Classified Ad application for the VOD Content Delivery System, FIG. 2B illustrates a Content Management Website for the Classified Ad application, FIG. 2C illustrates a Content Screening Component of the system, and FIG. 2D illustrates a Content Feed and Conversion Components of the system.

#### DETAILED DESCRIPTION OF INVENTION

Referring to FIG. 1A, an overall system architecture for a VOD content delivery system includes a VOD Application Server 10 located at a Cable Head End. The VOD Applica-

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tion Server 10 manages a Database 11 of templates and video content segments from Video Server 12 for generating templated VOD content. The VOD content is generated in response to a viewer request signal transmitted from the Digital Set Top Box 21 of a viewer's TV equipment through the Digital Cable Television System 13 to the VOD Application Server 10 at the Cable Head End. The VOD Application Server 10 may be of the type which enables any compatibly-developed VOD applications to be loaded on and operated on the server. An example of such a VOD Application Server is the Navic N-Band™ server as previously described. Templates for displaying VOD content are created at an Application Data Center 30 and stored in the Database 11 for use by the operative VOD application. The templates may be designed, for example, to present video ad content displays in a logo frame, or to provide navigation buttons and viewer selection options in a frame around currently displayed video content. In the preferred embodiment described in greater detail below, the templates are used to provide navigation aids in a series of progressively more focused ad display types. A Video Content Encoder 31 is used to encode raw video feeds into formatted video content segments compatible with the VOD platform and supply them through a Video Content Distribution Network 14 to the Video Server 12.

In operation, the VOD Application Server 10 operates a VOD application for the CATV system, for example, "automobile infomercials on demand". The viewer sends a request for selected VOD content, such as to see an infomercial on a specific model type made by a specific auto manufacturer, by actuating a viewer request signal by a key press on the viewer's remote control unit transmitting an IR signal to the Set Top Box 21 that is sent on a back channel of the Digital Cable Television System 13 to the VOD Application Server 10 at the Cable Head End. In response to the signal, the VOD Application Server 10 determines the VOD content being requested and retrieves the infomercial ad display template from the Template Database 11 and video content segment from the Video Server 12, in order to generate the corresponding templated VOD content. In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server 10 retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a "drill-down navigation" method to find specific end content of interest.

Referring to FIG. 1B, a preferred embodiment of the templated VOD content delivery system is shown providing a User Interface using Drill-Down Navigation through display ads, such as for automobile infomercials. When the viewer selects a VOD application (channel), such as "Wheels-On-Demand", the viewer's TV displays a Main Menu with buttons inviting the viewer to "Select Category". The viewer can select an "Auto" category, and the TV then displays an "Auto" menu with buttons inviting the viewer to "Select Make", such as Make A, Make B, etc. When the viewer makes a selection, such as Make A, the viewer's TV displays a further menu that is a Gateway into templated VOD content delivery which enables Drill-Down Navigation by templated display ads. Through the Gateway, the VOD Application leaves the Menu mode and enters the Drill Down Navigation mode for successively displays of hierar-



chically-ordered video content which allow the viewer to navigate to progressively more focused content. In this example, the highest level of the hierarchy includes categories for Model, Local Dealer, Sales Events, and/or Inventory. When the viewer selects a category such as "Model" from the Gateway, for example, the VOD Application creates a templated ad display showing video content generic to all models by that automaker framed in a frame which has links (buttons or choices) for a list of the specific models made by that automaker. When the viewer selects the link to a specific model, "Model A" for example, the VOD Application creates a templated ad display showing video content for Model A, and the viewer can then choose to run a long-form infomercial of the Model A video. Alternatively, the Drill-Down Navigation can continue with further levels of specificity, such as "Custom Packages", "Options", "Colors/Stylings", etc. Similarly, the selection of the "Local Dealer" category from the Gateway can bring up a templated ad for local dealers with links to specific local dealers in the viewer's cable service area, and a click on a specific "Dealer A" can bring up a templated ad for Dealer A with further links to more specific content pertaining to Dealer A, such as "Current Sales Promotions", etc.

In this manner, the templated VOD content delivery system allows the viewer to navigate to specific content of high interest to the viewer using the Drill-Down ads as a navigation tool, while at the same time having a unique visual experience of moving through a series of ads mirroring the viewer's path to the subject of interest. The templated VOD ads are generated dynamically by searching the Content/Template database with each request by a viewer, enabling the system to display updated navigation choices and content simply by updating the database with updated links and video content. For example, if the Auto Maker changes the Model types of autos currently available, or if Local Dealer A changes its current sales promotions for autos currently available, that advertiser's ads can be updated with new, template frame navigation links and content, instead of entirely new ads or screen displays having to be shot, produced, contracted, delivered, and programmed with the cable TV company. Many other types of layered or in depth ads, subjects, and interactive TV applications can be enabled with the use of the Drill-Down Navigation method. The selections or preferences exhibited by viewer navigation paths through the Drill-Down Navigation can also be tracked, profiled, and/or targeted as feedback data to advertisers for fine-tuning Drill-Down Navigation designs.

In FIG. 1C, an example illustrates how a templated VOD display is generated in layers. A Background screen provides a basic color, logo, or graphical theme to the display. A selected Template (display frame) appropriate to the navigation level the intended display resides on is layered on the Background. The Template typically has a frame in which defined areas are reserved for text, display image(s), and navigation links (buttons). Finally, the desired content constituted by associated Text, Image & Buttons is retrieved from the database and layered on the Template. The resulting screen display shows the combined background logo or theme, navigation frame, and text, video images, and buttons.

Referring again to FIG. 1A, a Tracking System 15 of conventional type can be installed at the Cable Head End to aggregate non-personal data on what channels and programs viewers watch. For the Drill Down Navigation method, the Tracking System 15 can include tracking of the navigation paths viewers use to find subjects of interest in a VOD

Application. The aggregation of viewer navigation data can indicate what subjects are most popular, whether some subjects are of greater interest to viewers at certain times of day, of certain demographics, or in relation to certain products or services. The VOD Application Server 10 can export the aggregated viewer navigation data to an external Profiling System 16, such as a non-biased or unrelated firm applying profile analysis methods. The results of the Profiling System 16 can be communicated to a Targeting System 17, such as a template design firm or content production company, to fine-tune the presentation of the templated VOD content consistent with viewer preferences or interests. The feedback from the Targeting System can be supplied as feedback to the VOD Application Server to modify the Content/Template Database 11.

Another application for the templated VOD content delivery system can be developed to support video advertisements which link national to local market ad campaigns in "drill-down" fashion. Advertisers, both national and local, can pay for placement of their video advertisements on the system. When the VOD Application is run, the national ads are displayed as a Gateway to linking to the local market ads. In this manner, national ads can be used to transition viewers from general interest in a product to finding specific information about the product available locally.

The templated VOD content delivery system can also support "traffic building" videos, including music videos, that may not generate direct revenue. Once a video is encoded and registered into the system, the management and distribution of the video is conducted through software systems and automated controls. The User Interface provides the user with the ability to navigate and find desired video content. Selection of a category presents the user with a list of video titles available for playback. Categories and title lists can be generated using real-time database queries, allowing for database-driven management of content within the User Interface. The User Interface can also support a search interface which allows the user to search the video content database to generate a list of video titles with specific characteristics.

The core services and functions of the VOD content delivery system can include:

Encoding—converts videos to proper digital format for playback on cable video-on-demand systems, currently MPEG2 format

Metadata Input—allows for the input of descriptive data regarding each video

Packaging—Prepares a data package for transport consisting of the encoded video file and the metadata

Scheduling—Establishes the schedule when packages are to be delivered to cable video-on-demand systems via the transport system

Transport—Digital broadcast medium through which the packages are migrated from the central processing facility to the cable video-on-demand systems.

The core services and functions of the User Interface system can include:

Development of UI "pages"—An Internet-based system is used for the composition, coding and quality assurance of the User Interface images ("pages") that are presented to the user on an interactive basis.

Category and List Presentation—The category lists and title lists presented to the user for navigation and selection can be generated and rendered real-time using database queries against the video metadata database. These lists can also be incorporated in the fully rendered graphics if real-time queries are not required or desired.

**Distribution**—The UI system supports a scheduling and transport subsystem separate from the video distribution system for the distribution of the UI assets and related set-top box software components to local UI servers installed at the cable head end.

**User Input Device**—The UI system receives user input and commands from the IR remote control used with the digital set-top box.

**User Database**—The UI system maintains a database of set-top box addresses that is used to identify the users of the system. This database is the seed for the Profiling Database system described below.

**Targeting**—The UI system is capable of changing the UI presentation to a specific user based on the information contained in the User Database and the Profiling Database.

The core services and functions of the Tracking System can include:

**Consolidation of Video-On-Demand Data**—The Tracking System can be made capable of ingesting and consolidating usage data provided by the cable video-on-demand systems. This may be performed through automated interfaces or “feeds”, or it may be performed through the batch processing of data files delivered by the cable operators.

**Consolidation of UI Data**—The Tracking System can gather and consolidate data from the UI system on an automated basis. The UI system can provide data describing the user commands, behaviors, responses and requests generated by each user while using the User Interface system.

**Reporting**—The Tracking System can generate reports and analyses of the Video-On-Demand data and the UI data.

**Web Interface**—The Tracking System can include a Web interface for providing authorized users such as advertisers with access to specific reports.

The core services and functions of the Profiling System can include:

**Consolidation of Profiling Data**—The Profiling System can be made capable of consolidating on a continuing, automated basis all user-related data requested by advertisers or by the system operator.

**Interface to Targeting System**—The Profiling System can provide pertinent data as required by the Targeting System within the UI system. This data is used to reformat UI presentations based on the data values.

**Interface to Targeting System**—The Profiling System data can be accessed and incorporated into the Targeting System.

**Support of Private and Public Data**—The Profiling System can segregate and maintain as private any data gathered specifically for an advertiser for the use of that advertiser.

As another aspect of the present invention, a VOD content delivery system may be adapted to offer consumer-generated classified ads on TV. The VOD content delivery system is provided with a Content Management frontend to receive consumer input and convert it to video display ads maintained in the system database. Referring to FIG. 2A, a system for managing, converting and displaying individual consumer-generated ads on a VOD content delivery system has a Web-based Content Management System 40 for enabling an individual user to upload content from their computer via a web browser to display a consumer-generated video ad on TV. The uploaded content includes meta data for classifying the video ad by title and topical area(s). Content Screening System 41 is used for screening the content input by the individual user, such as by performing automatic searching for objectionable text, audio, video and/or images and rejecting the content if found objection-

able. A Content Feed System 42 is used to automatically transfer consumer-generated content screened through the Content Screening System 41 to a Content Conversion System 43. This system automatically converts the consumer-generated content supplied by the Content Feed System 42 into video display format compatible with the VOD content delivery system. The converted video ad is indexed by title and classified topical areas according to the meta data supplied by the user, in accordance with the indexing system maintained by the Content Management System. The VOD Content Delivery System 44 operates a Classified Ads VOD Application in which menus for finding classified ads are navigated by viewers, and specific classified ads are delivered through the Digital Cable Television System for display as video ads on the viewer's TV equipment in response to viewer request input by remote control to the Digital Set Top Box 21, as described previously with respect to the operation of the general VOD platform.

Referring to FIG. 2B, the Web-based Content Management System 40 includes a plurality of functional components to allow consumers to create and manage their own classified ads as interactive television content, as well as pay for the distribution of their content within the digital cable television system. A Classified Management Application 50 is used to receive consumer-input content, have it screened (by the Content Screening System 41, not shown), and store it in the Classified Metadata, Image and Video Database 51. Consumer payment for running video ads is handled by the Transaction Processing Component 53. Also included in the Content Management System is an Account Management Component 55 and Account & Permissions Database 56 for management of user accounts for use of the web-based TV Classified Ads system. A Bulletin Board Ads application may be operated in parallel with the TV Classified Ads application. A Bulletin Board Management Application 54 and Database 57 enable the creation and management of consumer-generated content relating to public announcements and other items of general interest for groups, organizations or topics. The preferred VOD Content Delivery System uses templated VOD content, and a Template Library 58 is used to store templates for both the Classified Ads and Bulletin Board Ads applications.

The Account Management Component controls the access by persons to the web-based Content Management System. The Account Management Component identifies persons accessing the system for the first time and allows these persons to register and create an account by providing an account name, password, credit card information and other information required for the payment of fees. The Account Management Component controls the access by registered users to their accounts and manages the privileges and security associated to all accounts. Persons may create accounts for the creation and management of Classified Ads. Accounts capable of accessing the Bulletin Board Management Application may also be assigned by a system administrator in the Account Management Component. Any account capable of accessing the Bulletin Board application can then create and manage bulletin board ads for the assigned bulletin boards.

The Classified Content Management System enables users to upload text, audio, video, and/or image files for classified ads in industry-standard file formats and have it converted into video display ads compatible with the VOD Content Delivery System. Classified ads are searched on the viewer's TV equipment by menus and lists indexed by title and topical areas corresponding to the metadata associated with the classified ads content. Selection of a listed item

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results in the display of a TV display ad containing uploaded text, images, video and/or audio. Users pay listing fees to the operator of the system for maintaining and displaying the classified ads on the digital cable television system.

Significant features of the Classified Ads Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) uploading digital images of the item to the Content Management System; (c) uploading digital video of the item to the Content Management System; (d) uploading digital audio regarding the item to the Content Management System; (e) automated size and resolution processing of digital images uploaded to the system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided content; (j) ability to save classified content in persistent memory or storage for subsequent modification; (k) ability to mark classified content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when a classified content item is to become accessible by users of the interactive television system and the data and time when a classified content item is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that a specific content item is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created classified content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific consumer-generated content by users of the interactive television system; and (p) ability to calculate fees for classified content and submit payment of the fees using the Transaction Processing System.

As noted in (i) above, the Classified Content Management System allows the user to view the content they have composed using the templates. The templates are designed specifically for use on interactive television systems and the user is able to view on the web-interface their content as composed for presentation on television. As noted in (j) above, the Classified Content Management System allows the persistent storage of classified content; although the user is composing interactive television pages using a template system, the content is persistently stored as individual elements to simplify changes by the user and to allow the conversion of the content to different formats as required by different interactive television systems.

The Bulletin Board Content Management System provides the users of the web-based Content Management System with content creation and content management tools for the creation and maintenance of consumer-generated content related to announcements and other informational items of general interest. Bulletin Board content is displayed on the interactive television system as dedicated interactive television screens (bulletin boards), where approved groups, organizations or topics are each assigned a bulletin board for the display of their information. Bulletin Board content is displayed as list items organized within a bulletin board; selection of a list item results in the display of an interactive television screen containing or providing access to the descriptive data, text, images, video and audio regarding the item.

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An alternative implementation of a Bulletin Board can display the content as scrolling text, where the user scrolls through the text, or the text scrolls automatically. Bulletin Board accounts will pay fees determined by the operator of the system for the distribution of the bulletin board content on the interactive television system for display on the digital cable television system. Significant features of the Bulletin Board Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) upload digital images to the content management; (c) upload digital video to the content management system; (d) upload digital audio to the content management system; (e) automated size and resolution processing of digital images uploaded to the system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided bulletin board content; (j) ability to save bulletin board content in persistent memory or storage for subsequent modification; (k) ability to mark bulletin board content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when specific bulletin board content is to become accessible by users of the interactive television system and the data and time when specific bulletin board content is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that specific bulletin board content is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created bulletin board content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific bulletin board content by users of the interactive television system; and (p) ability to calculate fees for bulletin board content and submit payment of the fees in conjunction with the Transaction Processing component.

The Transaction Processing component allows users of the Classified Content Management System and Bulletin Board Content Management System to determine and pay for any fees resulting from their use of these systems. The Transaction Processing component will allow users to pay for fees using credit cards or other supported payment methods. Significant features of the Transaction Processing component include: (a) ability to maintain business rules for use by the Transaction Processing system to determine fees based on user type and content type; (b) ability to maintain business rules for one or more payment methods for use by the Transaction Processing system in handling the settlement of fees; (c) ability to maintain business rules for user account and payment settlement conditions such as delinquency and lack-of-credit for use by the Transaction Processing system in determining user account privileges and content status; and, (d) ability to process payment of fees in real-time for payment methods that support real-time settlement.

Referring to FIG. 2C, the Content Screening System (41) is comprised of a Text Screening Application 60 which searches for objectionable words or phrases, an Image Screening Application 61 which searches for objectionable graphic images, a Video Screening Application 62 which searches for objectionable images or audio words or phrases in video segments, and an Audio Screening Application 63 which searches for objectionable words or phrases in audio

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segments. The Content Screening System can be used for both Classified Ads content and Bulletin Board content. Content that has been screened by the Content Screening System is then transferred to the aforementioned Classified Ads Database 51 or the Bulletin Board Content Database 57. The system also has component 64 for Editorial and Customer Service Functions for Classified Ads, and component 65 similarly for Bulletin Board content. These can each include an Email Function to send confirmations of input, reasons for rejection of posting, suggested corrections, further processing, and posting of content to consumers using the system.

Significant features of the Content Screening System include: (a) ability to maintain a library of objectionable or illegal words and phrases for use in the screening of text; (b) ability to perform automated analysis of user content text using the text library as an input and alert system administration personnel to the use of objectionable or illegal content and the use of unknown and suspect words or phrases; (c) ability to maintain a library of objectionable or illegal image elements for use in the screening of images; (d) ability to perform automated image recognition analysis against user content images using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (e) ability to maintain a library of objectionable or illegal image elements for use in the screening of video; (f) ability to perform automated image recognition analysis against user content video using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (g) ability to maintain a library of objectionable or illegal audio elements for use in the screening of audio; (h) ability to perform automated audio analysis against user content audio using the library of audio elements as an input and alert system administration personnel to the use of objectionable or illegal content; and (i) ability to save screened content in persistent memory or storage for subsequent processing. Content Screening is automatically performed with the Content Management System 40 during the user process of submitting and/or creating consumer-generated content or may be performed as a process subsequent to the creation of content by the user.

Referring to FIG. 2D, the Content Feed System 42 and the Content Conversion System 43 provide for the transfer of user content from the Content Screening System and conversion to video content format compatible with the VOD Content Delivery System 44. The Content Feed System 42 has a Content Selection/Date Filtering Application which selects consumer-generated content uploaded to the system that is within the dates contracted for posting and display of the content as Classified Ads or on Bulletin Boards. Content within the active date range is transferred to the Active Classified Ads Database 71A or the Active Bulletin Board Database 71B.

The Content Conversion System receives consumer-generated content in industry standard formats or created in viewable format (HTML) on the web-based input system and converts the content into formats compatible with the VOD Content Delivery System and for display on viewers' televisions. The Content Conversion System 43 has an Image Conversion Application 72 which converts consumer-uploaded image files (in industry-standard formats such as JPEG, GIF, TIFF, BMP, PDF, PPT, etc.) into VOD content format, a Video Conversion Application 73 which converts consumer-uploaded video files into VOD content format, and an Audio Conversion Application 74 which converts consumer-uploaded audio files into VOD content

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format. Content converted to VOD content format is stored in the Active Converted Classified Ads Database 75A or the Active Converted Bulletin Board Database 75B. The content is subject to a further Production Push Function 76A, 76B and stored in the Production Classified Ads Database 77A or the Production Bulletin Board Database 77B, if any presentation formatting, date stamping, template framing, or other system editing is required by the system.

Significant features of the Content Feed System include: (a) ability to select user content for submission to the Content Conversion System through the testing of appropriate parameters including the date and time information contained in the user content; (b) ability to appropriately package the elements of the user content to permit the efficient transfer of these content elements to the Content Conversion System through an Application Program Interface or other interface; (c) ability to create, maintain and execute a schedule for when the Content Feed System will execute on an automatic basis for the automatic transfer of consumer-generated content to the Content Conversion System; and, (d) ability to execute the functions of the Content Feed System on a manual basis in the presence or absence of a schedule. The Content Feed System may be able to package and distribute content to single or multiple Content Conversion Systems.

Significant features of the Content Conversion system include: (a) ability to receive content packages delivered by the Content Feed System through an Application Program Interface or other interface; (b) ability to process the elements of consumer-generated content into data, text, graphic, video and audio elements that are compatible with the interactive television system and maintain the content presentation created by the user on the web-based Content Management System; (c) ability to save reformatted content in persistent memory or storage for subsequent distribution and use by the interactive television system; and, (d) ability to inform the interactive television system that consumer-generated content is available for distribution and use. The Content Conversion System may be added as a component system of the VOD Content Delivery System, or it may be implemented as a wholly separate system that connects to the VOD Content Delivery System through an Application Program Interface or other interface. When implemented as a system that is separate from the VOD Content Delivery System, it is possible to support multiple, different interactive television systems by either (a) incorporating multiple formatting requirements into a single instance of the Content Conversion System or (b) creating multiple Content Conversion Systems, each supporting the formatting requirements for a specific interactive television system. Either implementation allows for a single instance of consumer-generated content that is created and maintained using the web-based Content Management System to be distributed and displayed on multiple, different interactive television systems with different formatting requirements.

The VOD Content Delivery System 44, as described previously, provides for the distribution of screened, converted, properly formatted consumer-generated content to viewers' televisions, typically through the use of digital set-top boxes connected to a digital cable television system capable of supporting real-time two-way data transfer between the set-top box and the Cable Head End. Significant features of the VOD Content Delivery System include: (a) ability to receive properly formatted content from the Content Conversion System; (b) ability to distribute said content over a digital cable television system and display this content on television as an interactive television presenta-

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tion; (c) ability to receive user commands generated by an infrared remote control device, keyboard or other device; (d) ability to respond to the user commands by displaying appropriate content or executing desired functionality; and, (e) ability to generate and collect data regarding the user sessions and the viewing data regarding consumer-generated content on the interactive television system and make this data accessible to the Tracking System. The VOD Content Delivery System can employ templated VOD content delivery, as described previously with respect to FIG. 1A, enabling use of the Drill Down Navigation method in which viewers can navigate visually through classified ad hierarchical categories to specific titles or content.

The VOD Content Delivery System for the Classified Ads application can also employ the Tracking System 15 for the collection and consolidation of viewing data generated by the interactive television system and the generation of reports against this viewing data. For example, the Tracking System can track the number of viewer requests for viewing that a classified ad received in a given period and calculate billing charges accordingly. The Tracking System can make this information available to users of the Content Management System as well as to system administrative personnel performing general analysis of interactive television services and associated content. Significant features of the Tracking System include: (a) ability to access and process the data generated by the Classified Ads application; (b) ability to form summaries of the viewing data against desired parameters; (c) ability to save data, summaries and reports in persistent memory or storage for subsequent modification or access; (d) ability to make data, summaries and reports accessible by users of the web-based Content Management System, restricting the data accessible by any specific user to data regarding the content created by that user account on the Content Management System; and, (e) ability to make data, summaries and reports accessible by to system administration personnel.

It is understood that many modifications and variations may be devised given the above description of the principles of the invention. It is intended that all such modifications and variations be considered as within the spirit and scope of this invention, as defined in the following claims.

What is claimed is:

1. A video-on-demand application server system comprising one or more computers and computer-readable memory operatively connected to the one or more computers of the video-on-demand application server system, and programmed to perform at least the following steps:

(a) receiving, by the video-on-demand application server system from a Web-based content management system, first video-on-demand application-readable metadata associated with first video content and usable to generate a video-on-demand content menu,

wherein the first video-on-demand application-readable metadata comprises:

- (1) first title information comprising a first title, and
- (2) first content provider designated hierarchically arranged category information and subcategory information to specify a location of the first title information for the video content in a video-on-demand application, the first content provider designated category information and subcategory information associated with the first title information of the first video content using a same hierarchical structure of categories and subcategories as is to be used for placement of the first title information in the video-on-demand content menu;

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wherein the received first video content was uploaded to the Web-based content management system by a content provider device associated with a first video content provider via the Internet in a digital video format, along with the associated first video-on-demand application-readable metadata including first title information, and first content provider designated hierarchically arranged category information and subcategory information, designated by the first video content provider, to specify a hierarchical location of the first title of the first video content within the video-on-demand content menu using first category information and first subcategory information associated with the first title information;

(b) generating, by the video-on-demand application server system, video-on-demand content menu information data, including at least the first video-on-demand application-readable metadata associated with the first video content and usable to populate the video-on-demand content menu;

(c) sending, from the video-on-demand application server system to a respective set top box operatively connected to respective television equipment of a respective television service subscriber the generated video-on-demand content menu information data;

(d) generating, at the respective set-top box, using the video-on-demand content menu information data, the video-on-demand content menu for navigating through titles, including the first title of the first video content, by hierarchically-arranged category information and subcategory information, including at least the first category information and the first subcategory information in order to locate a respective one of the titles whose associated video content is desired for viewing on respective television equipment,

wherein the video-on-demand content menu lists the titles using the same hierarchical structure of category information and subcategory information as was designated by one or more video content providers, including the first video content provider, in the uploaded first video-on-demand application-readable metadata for the respective video content, wherein a plurality of different display templates, including a first display template, are accessible;

(e) receiving, by the video-on-demand application server system from the respective set top box, an electronic request for the first video content associated with the selected first title for display on the television equipment of the television service subscriber in response to the respective television service subscriber selecting, via a television control unit in communication with the respective set top box, the respective title associated with the video content from the hierarchically-arranged category information and subcategory information of the video-on-demand content menu;

(f) causing, by the video-on-demand application server system, to be transmitted to the respective set top box from a video server, the selected first video content for display on the respective TV equipment.

2. The video-on-demand application server system of claim 1, wherein the television control unit is a remote control unit.

3. The video-on-demand application server system of claim 1, wherein at least some of the plurality of different display templates correspond to different levels of the hierarchical structure of the respective category information and subcategory information.

4. The video-on-demand application server system of claim 1, wherein the at least one of the plurality of different display templates is configured to display a logo frame.

5. The video-on-demand application server system of claim 1, wherein the at least one of the plurality of different display templates is configured to provide navigation buttons.

6. The video-on-demand application server system of claim 1, wherein the at least one of the plurality of different display templates is configured to provide viewer selection options.

7. The video-on-demand application server system of claim 1, wherein the respective category information and subcategory information associated with the first video content correspond to one or more topics that pertain to video content from more than one video content provider.

8. The video-on-demand application server system of claim 1, wherein at least one of the plurality of different display templates is used to generate a templated video-on-demand display that comprises a background and a template layer having one or more areas for display of the first video-on-demand application-readable metadata provided by the video content provider.

9. The video-on-demand application server system of claim 1, wherein the video-on-demand content menu comprises a search interface that allows the television service subscriber to search a video content database based on specified characteristics.

10. The video-on-demand application server system of claim 1, wherein the video-on-demand content menu is an interactive user interface.

\* \* \* \* \*



## Related U.S. Application Data

(56)

## References Cited

continuation of application No. 15/864,561, filed on Jan. 8, 2018, now Pat. No. 10,045,084, which is a continuation of application No. 15/589,196, filed on May 8, 2017, now Pat. No. 9,866,910, which is a continuation of application No. 15/253,321, filed on Aug. 31, 2016, now Pat. No. 9,648,388, which is a continuation of application No. 14/978,953, filed on Dec. 22, 2015, now Pat. No. 9,491,511, which is a continuation of application No. 14/706,721, filed on May 7, 2015, now Pat. No. 9,338,511, which is a continuation of application No. 12/852,663, filed on Aug. 9, 2010, now Pat. No. 9,078,016, which is a division of application No. 11/952,552, filed on Dec. 7, 2007, now Pat. No. 7,774,819, which is a division of application No. 10/909,192, filed on Jul. 30, 2004, now Pat. No. 7,590,997.

## (51) Int. Cl.

**H04N 21/472** (2011.01)  
**H04N 21/482** (2011.01)  
**G06Q 30/02** (2012.01)  
**H04N 21/438** (2011.01)  
**H04N 21/61** (2011.01)  
**H04N 21/239** (2011.01)  
**H04N 21/442** (2011.01)  
**H04N 21/222** (2011.01)  
**H04N 21/2343** (2011.01)  
**H04N 21/4627** (2011.01)  
**H04N 21/254** (2011.01)  
**H04N 21/643** (2011.01)  
**H04N 21/422** (2011.01)  
**H04N 21/258** (2011.01)  
**H04N 21/262** (2011.01)  
**H04N 21/858** (2011.01)  
**H04N 21/84** (2011.01)  
**H04N 21/81** (2011.01)  
**H04N 21/4722** (2011.01)  
**H04N 21/431** (2011.01)  
**H04N 21/2743** (2011.01)  
**H04N 21/2547** (2011.01)  
**H04N 7/173** (2011.01)

## (52) U.S. Cl.

CPC ..... **H04N 21/2221** (2013.01); **H04N 21/235** (2013.01); **H04N 21/2353** (2013.01); **H04N 21/2393** (2013.01); **H04N 21/234309** (2013.01); **H04N 21/2541** (2013.01); **H04N 21/2547** (2013.01); **H04N 21/25858** (2013.01); **H04N 21/25891** (2013.01); **H04N 21/26225** (2013.01); **H04N 21/2743** (2013.01); **H04N 21/42204** (2013.01); **H04N 21/4312** (2013.01); **H04N 21/4314** (2013.01); **H04N 21/4383** (2013.01); **H04N 21/44222** (2013.01); **H04N 21/4627** (2013.01); **H04N 21/4722** (2013.01); **H04N 21/482** (2013.01); **H04N 21/4821** (2013.01); **H04N 21/6118** (2013.01); **H04N 21/6125** (2013.01); **H04N 21/6175** (2013.01); **H04N 21/64322** (2013.01); **H04N 21/812** (2013.01); **H04N 21/84** (2013.01); **H04N 21/858** (2013.01); **H05K 999/99** (2013.01)

## U.S. PATENT DOCUMENTS

5,446,891 A 8/1995 Kaplan et al.  
5,479,268 A 12/1995 Young et al.  
5,485,219 A 1/1996 Woo  
5,550,735 A 8/1996 Slade et al.  
5,559,549 A 9/1996 Hendricks et al.  
5,566,287 A 10/1996 Delpuch  
5,583,763 A 12/1996 Atcheson et al.  
5,589,892 A 12/1996 Knee et al.  
5,592,551 A 1/1997 Lett et al.  
5,594,936 A 1/1997 Rebec et al.  
5,616,876 A 4/1997 Cluts  
5,648,824 A 7/1997 Dunn et al.  
5,670,730 A 9/1997 Grewe et al.  
5,686,954 A 11/1997 Yoshinobu et al.  
5,689,799 A 11/1997 Dougherty et al.  
5,699,125 A 12/1997 Rzeszewski et al.  
5,701,161 A 12/1997 Williams et al.  
5,721,827 A 2/1998 Logan et al.  
5,734,853 A 3/1998 Hendricks et al.  
5,739,451 A 4/1998 Winksy et al.  
5,758,258 A 5/1998 Shoff et al.  
5,759,101 A 6/1998 Von Kohorn  
5,768,592 A 6/1998 Chang  
5,778,181 A 7/1998 Hidary et al.  
5,790,176 A 8/1998 Craig  
5,790,426 A 8/1998 Robinson  
5,790,935 A 8/1998 Payton  
5,798,785 A 8/1998 Hendricks et al.  
5,798,921 A 8/1998 Johnson et al.  
5,805,763 A 9/1998 Lawler et al.  
5,812,123 A 9/1998 Rowe et al.  
5,813,014 A 9/1998 Gustman  
5,822,123 A 10/1998 Davis et al.  
5,826,102 A 10/1998 Escobar  
5,832,499 A 11/1998 Gustman  
5,850,218 A 12/1998 LaJoie et al.  
5,859,898 A 1/1999 Checco  
5,867,821 A 2/1999 Ballantyne  
5,872,850 A 2/1999 Klein et al.  
5,884,033 A 3/1999 Duvall et al.  
5,892,536 A 4/1999 Logan et al.  
5,914,746 A 6/1999 Matthews  
5,918,303 A 6/1999 Yamaura et al.  
5,926,230 A 7/1999 Nijima et al.  
5,931,901 A 8/1999 Wolfe  
5,956,716 A 9/1999 Kenner et al.  
5,969,283 A 10/1999 Looney et al.  
5,991,801 A 11/1999 Rebec et al.  
6,005,561 A 12/1999 Hawkins et al.  
6,008,803 A 12/1999 Rowe et al.  
6,018,768 A 1/2000 Ullman et al.  
6,025,837 A 2/2000 Matthews et al.  
6,029,045 A 2/2000 Picco et al.  
6,038,591 A 3/2000 Wolfe  
6,049,823 A 4/2000 Hwang  
6,062,868 A 5/2000 Toriumi  
6,088,455 A 7/2000 Logan et al.  
6,088,722 A 7/2000 Herz et al.  
6,092,080 A 7/2000 Gustman  
6,100,883 A 8/2000 Hoarty  
6,112,186 A 8/2000 Bergh et al.  
6,118,442 A 9/2000 Tanigawa  
6,118,450 A 9/2000 Proehl et al.  
6,128,012 A 10/2000 Seidensticker, Jr. et al.  
6,148,081 A 11/2000 Szymanski et al.  
6,161,142 A 12/2000 Wolfe  
6,163,316 A 12/2000 Killian  
6,166,730 A 12/2000 Goode et al.  
6,177,931 B1 1/2001 Alexander et al.  
6,182,094 B1 1/2001 Humpleman et al.  
6,201,538 B1 3/2001 Wugofski  
6,205,582 B1 3/2001 Hoarty  
6,208,799 B1 3/2001 Marsh et al.  
6,233,736 B1 5/2001 Wolzien  
6,237,146 B1 5/2001 Richards



(56)	<b>References Cited</b>			7,444,402 B2 *	10/2008	Rennels .....	H04H 20/31 709/219
	U.S. PATENT DOCUMENTS			7,471,834 B2	12/2008	Sull et al.	
				7,490,346 B2	2/2009	Alao et al.	
6,248,946 B1	6/2001	Dwek		7,493,643 B2	2/2009	Ellis	
6,269,275 B1	7/2001	Slade		7,516,472 B2	4/2009	Danker et al.	
6,289,346 B1	9/2001	Milewski et al.		7,548,565 B2	6/2009	Sull et al.	
6,305,016 B1	10/2001	Marshall et al.		7,584,159 B1	9/2009	Chakrabarti et al.	
6,317,885 B1	11/2001	Fries		7,590,997 B2	9/2009	Perez	
6,332,175 B1	12/2001	Birrell et al.		7,594,245 B2	9/2009	Sezan et al.	
6,357,042 B2	3/2002	Srinivasan		7,606,883 B1	10/2009	Allibhoy et al.	
6,377,530 B1	4/2002	Burrows		7,624,337 B2	11/2009	Sull et al.	
6,393,158 B1	5/2002	Gould et al.		7,631,336 B2	12/2009	Perez	
6,408,435 B1	6/2002	Sato		7,644,429 B2	1/2010	Bayassi et al.	
6,418,556 B1	7/2002	Bennington et al.		7,650,621 B2	1/2010	Thomas et al.	
6,445,398 B1	9/2002	Gerba et al.		7,690,020 B2	3/2010	Lebar	
6,446,083 B1	9/2002	Leight et al.		7,698,723 B2	4/2010	Hicks, III et al.	
6,476,826 B1	11/2002	Plotkin et al.		7,720,707 B1	5/2010	Mowry	
6,539,548 B1	3/2003	Hendricks et al.		7,725,740 B2	5/2010	Kudelski et al.	
6,546,393 B1	4/2003	Khan		7,761,899 B2	7/2010	Buehl et al.	
6,564,380 B1	5/2003	Murphy		7,774,819 B2	8/2010	Perez	
6,606,746 B1	8/2003	Zdepski et al.		7,801,838 B2	9/2010	Colbath et al.	
6,678,463 B1	1/2004	Pierre et al.		7,801,910 B2	9/2010	Houh et al.	
6,738,978 B1	5/2004	Hendricks		7,814,519 B2	10/2010	Rao et al.	
6,754,904 B1 *	6/2004	Cooper .....	G06Q 10/10 348/E7.071	7,831,512 B2	11/2010	Akadiri	
				7,835,920 B2	11/2010	Snyder et al.	
6,760,721 B1	7/2004	Chasen et al.		7,885,963 B2	2/2011	Sanders	
6,766,100 B1	7/2004	Komar et al.		7,900,229 B2	3/2011	Dureau	
6,772,433 B1	8/2004	LaJoie et al.		7,904,924 B1	3/2011	de Heer et al.	
6,774,926 B1	8/2004	Ellis et al.		7,908,626 B2	3/2011	Williamson et al.	
6,804,825 B1	10/2004	White et al.		7,917,933 B2 *	3/2011	Thomas .....	G06F 3/0481 725/88
6,834,110 B1	12/2004	Marconcini et al.					
6,845,396 B1	1/2005	Kanojia et al.		7,921,448 B2	4/2011	Fickle et al.	
6,898,762 B2	5/2005	Ellis et al.		7,925,973 B2	4/2011	Allaire et al.	
6,928,433 B2	8/2005	Goodman et al.		7,926,079 B2	4/2011	Lebar	
6,931,451 B1	8/2005	Logan et al.		7,945,929 B2	5/2011	Knudson et al.	
6,968,364 B1	11/2005	Wong et al.		7,949,722 B1	5/2011	Ullman et al.	
6,976,229 B1	12/2005	Balabanovic et al.		7,950,033 B2	5/2011	Pierre et al.	
6,981,040 B1	12/2005	Konig et al.		7,962,414 B1	6/2011	Allibhoy et al.	
6,985,586 B2	1/2006	Hill		7,974,962 B2	7/2011	Krakirian et al.	
6,990,677 B1	1/2006	Pietraszak et al.		7,987,492 B2 *	7/2011	Liwerant .....	H04M 3/567 725/115
7,020,888 B2	3/2006	Reynolds et al.					
7,028,327 B1	4/2006	Dougherty et al.		7,996,861 B1	8/2011	Delpuch	
7,047,411 B1	5/2006	DeMello et al.		8,006,263 B2	8/2011	Ellis et al.	
7,055,166 B1	5/2006	Logan et al.		8,010,988 B2	8/2011	Cox	
7,055,169 B2	5/2006	Delpuch et al.		8,020,187 B2	9/2011	Cox	
7,058,223 B2	6/2006	Cox		8,042,132 B2 *	10/2011	Carney .....	G06Q 30/02 709/217
7,065,709 B2	6/2006	Ellis					
7,076,734 B2	7/2006	Wolff et al.		8,046,801 B2	10/2011	Ellis et al.	
7,089,309 B2	8/2006	Ramaley et al.		8,051,450 B2	11/2011	Robarts et al.	
7,100,185 B2	8/2006	Bennington et al.		8,090,605 B2	1/2012	Tota et al.	
7,103,905 B2 *	9/2006	Novak .....	H04N 7/17318 348/E7.071	8,107,786 B2	1/2012	Sardera	
				8,112,776 B2	2/2012	Schein et al.	
7,103,906 B1	9/2006	Katz et al.		8,122,034 B2	2/2012	Aravamudan et al.	
7,120,925 B2	10/2006	D'Souza et al.		8,151,290 B1	4/2012	Ujihara	
7,127,735 B1	10/2006	Lee et al.		8,191,098 B2	5/2012	Cooper et al.	
7,155,674 B2	12/2006	Breen et al.		8,205,237 B2	6/2012	Cox	
7,188,355 B1	3/2007	Prokopenko et al.		8,209,337 B2	6/2012	Park	
7,200,575 B2	4/2007	Hans et al.		8,214,254 B1	7/2012	Mowry	
7,213,005 B2	5/2007	Mourad et al.		8,219,446 B1	7/2012	Mowry	
7,222,163 B1 *	5/2007	Girouard .....	G11B 27/28 375/E7.025	8,249,924 B1	8/2012	Mowry	
				8,315,949 B2	11/2012	Akadiri	
7,225,455 B2	5/2007	Bennington et al.		8,332,268 B2	12/2012	Carruthers et al.	
7,231,419 B1	6/2007	Gheorghe et al.		8,340,994 B2	12/2012	Tota et al.	
7,243,139 B2	7/2007	Ullman et al.		8,346,605 B2	1/2013	Krikorian et al.	
7,269,854 B2	9/2007	Simmons et al.		8,365,230 B2	1/2013	Chane et al.	
7,277,870 B2	10/2007	Mourad et al.		8,397,255 B2	3/2013	Wachffogel et al.	
7,305,691 B2	12/2007	Cristofalo		8,434,118 B2 *	4/2013	Gonder .....	H04L 29/06027 725/87
7,308,413 B1	12/2007	Tota et al.					
7,337,462 B2	2/2008	Dudkiewicz et al.		8,464,302 B1	6/2013	Liwerant et al.	
7,367,043 B2 *	4/2008	Dudkiewicz .....	H04N 7/163 725/138	8,473,868 B1	6/2013	Kauffman	
				8,479,246 B2	7/2013	Hudson et al.	
7,386,512 B1	6/2008	Allibhoy et al.		8,566,871 B2	10/2013	Knowles et al.	
7,392,532 B2	6/2008	White et al.		8,621,541 B2	12/2013	Ullman et al.	
7,409,437 B2	8/2008	Ullman et al.		8,635,649 B2	1/2014	Ward, III et al.	
7,421,729 B2	9/2008	Zenoni		8,644,354 B2	2/2014	George et al.	
7,426,558 B1	9/2008	Allibhoy et al.		8,650,125 B2	2/2014	Akadiri	
7,434,244 B2	10/2008	Popov et al.		8,682,794 B2	3/2014	Akadiri	
				8,688,582 B2	4/2014	Akadiri	

(56)

## References Cited

## U.S. PATENT DOCUMENTS

8,700,448	B2	4/2014	Bertram et al.	2003/0154128	A1	8/2003	Liga
8,707,354	B1	4/2014	Moreau et al.	2003/0154475	A1	8/2003	Rodriguez et al.
8,713,595	B2	4/2014	Lemmons et al.	2003/0163375	A1	8/2003	Dombrowski et al.
8,843,978	B2	9/2014	Hardin	2003/0167449	A1	9/2003	Warren
8,955,029	B2	2/2015	Lewis	2003/0167471	A1	9/2003	Roth et al.
8,997,136	B2	3/2015	Brooks et al.	2003/0191816	A1	10/2003	Landress
9,047,626	B2	6/2015	Akadiri	2003/0204856	A1	10/2003	Buxton
9,055,325	B2	6/2015	Gaydou et al.	2003/0208756	A1	11/2003	Macrae et al.
9,066,118	B2	6/2015	Perez	2003/0226150	A1	12/2003	Berberet
9,078,016	B2	7/2015	Perez	2003/0234819	A1	12/2003	Daly
9,106,959	B2	8/2015	Perez	2004/0015989	A1	1/2004	Kaizu et al.
9,113,228	B2	8/2015	Perez	2004/0015998	A1	1/2004	Bokor
9,117,228	B1	8/2015	Akadiri	2004/0049788	A1	3/2004	Mori et al.
9,185,379	B2	11/2015	Gould et al.	2004/0073919	A1	4/2004	Gutta et al.
9,232,275	B2	1/2016	Perez	2004/0076936	A1	4/2004	Horvitz et al.
9,247,226	B2	1/2016	Gould et al.	2004/0078825	A1	4/2004	Murphy
9,292,866	B2	3/2016	Allaire et al.	2004/0103120	A1*	5/2004	Fickle ..... G06Q 10/10
9,349,136	B2	5/2016	Akadiri	2004/0117844	A1	6/2004	Karaoguz et al.
9,451,310	B2	9/2016	Akadiri	2004/0133918	A1	7/2004	Danker
9,635,408	B2	4/2017	Akadiri	2004/0136698	A1	7/2004	Mock
10,051,298	B2	8/2018	Bear et al.	2004/0148626	A1	7/2004	Sakao et al.
2001/0018771	A1	8/2001	Walker et al.	2004/0158855	A1	8/2004	Gu et al.
2001/0033736	A1	10/2001	Yap	2004/0172419	A1	9/2004	Morris et al.
2001/0049625	A1	12/2001	Mowry	2004/0194141	A1	9/2004	Sanders
2001/0052132	A1	12/2001	Fryer	2004/0205816	A1	10/2004	Barrett
2002/0019763	A1	2/2002	Linden et al.	2004/0231004	A1	11/2004	Seo
2002/0042921	A1	4/2002	Ellis et al.	2004/0268250	A1	12/2004	Danker
2002/0045960	A1	4/2002	Phillips et al.	2004/0268413	A1	12/2004	Reid et al.
2002/0056104	A1	5/2002	Burnhouse et al.	2005/0044577	A1	2/2005	Jerding
2002/0057892	A1	5/2002	Mano et al.	2005/0049933	A1	3/2005	Upendran et al.
2002/0059621	A1*	5/2002	Thomas ..... G06F 3/0481	2005/0050218	A1	3/2005	Sheldon
			725/87	2005/0071328	A1	3/2005	Lawrence
2002/0066106	A1	5/2002	Kanojia et al.	2005/0081237	A1	4/2005	Chen
2002/0069218	A1	6/2002	Sull et al.	2005/0097600	A1	5/2005	Heer
2002/0078456	A1	6/2002	Hudson	2005/0097622	A1	5/2005	Zigmond et al.
2002/0083451	A1	6/2002	Gill	2005/0097623	A1	5/2005	Tecot
2002/0087661	A1	7/2002	Matichuk et al.	2005/0125307	A1	6/2005	Hunt et al.
2002/0088009	A1	7/2002	Dudkiewicz et al.	2005/0129049	A1	6/2005	Srinivasan et al.
2002/0088010	A1*	7/2002	Dudkiewicz ..... H04N 7/163	2005/0138560	A1	6/2005	Lee et al.
			725/138	2005/0149987	A1	7/2005	Boccon-Gibod et al.
2002/0092019	A1	7/2002	Marcus	2005/0154679	A1	7/2005	Bielak
2002/0104099	A1*	8/2002	Novak ..... H04N 7/17318	2005/0160458	A1	7/2005	Baumgartner
			725/136	2005/0160465	A1	7/2005	Walker
2002/0120925	A1	8/2002	Logan	2005/0166230	A1	7/2005	Gaydou et al.
2002/0138843	A1	9/2002	Samaan et al.	2005/0188415	A1	8/2005	Riley
2002/0138844	A1	9/2002	Otenasek	2005/0193015	A1	9/2005	Logston
2002/0143629	A1	10/2002	Mineyama et al.	2005/0203918	A1	9/2005	Holbrook
2002/0144273	A1	10/2002	Reto	2005/0204388	A1	9/2005	Knudson et al.
2002/0147975	A1	10/2002	Seo	2005/0210524	A1	9/2005	Dolph
2002/0152224	A1	10/2002	Roth et al.	2005/0216941	A1	9/2005	Flanagan et al.
2002/0152318	A1	10/2002	Menon et al.	2005/0229209	A1	10/2005	Hildebolt et al.
2002/0163532	A1	11/2002	Thomas et al.	2005/0235318	A1	10/2005	Grauch et al.
2002/0174430	A1	11/2002	Ellis et al.	2005/0235319	A1	10/2005	Carpenter et al.
2002/0184634	A1	12/2002	Cooper	2005/0239546	A1	10/2005	Hedrick
2002/0184635	A1	12/2002	Istvan	2005/0240961	A1	10/2005	Jerding et al.
2002/0194194	A1*	12/2002	Fenton ..... G06F 16/958	2005/0240968	A1	10/2005	Knudson et al.
2002/0199188	A1	12/2002	Sie et al.	2005/0246752	A1	11/2005	Liwerant et al.
2002/0199194	A1	12/2002	Ali	2005/0267818	A1	12/2005	Kaplan
2003/0009542	A1	1/2003	Kasal et al.	2005/0283800	A1	12/2005	Ellis et al.
2003/0016940	A1	1/2003	Robbins	2005/0289151	A1	12/2005	Burke
2003/0018971	A1	1/2003	McKenna	2006/0004914	A1	1/2006	Kelly et al.
2003/0037010	A1*	2/2003	Schmelzer ..... G06F 21/10	2006/0015925	A1	1/2006	Logan
			705/67	2006/0020662	A1	1/2006	Robinson
2003/0055893	A1	3/2003	Sato et al.	2006/0029093	A1	2/2006	Van Rossum
2003/0066068	A1	4/2003	Gutta et al.	2006/0085830	A1	4/2006	Bruck et al.
2003/0084126	A1*	5/2003	Kumar ..... G06Q 30/02	2006/0123455	A1	6/2006	Pai
			709/219	2006/0155850	A1	7/2006	Ma et al.
2003/0084449	A1	5/2003	Chane et al.	2006/0174260	A1	8/2006	Gutta
2003/0093790	A1	5/2003	Logan et al.	2006/0200556	A1	9/2006	Brave et al.
2003/0101451	A1	5/2003	Bentolila et al.	2006/0267995	A1	11/2006	Radloff et al.
2003/0110506	A1	6/2003	Kim	2006/0287916	A1	12/2006	Starr et al.
2003/0149612	A1	8/2003	Berghofer et al.	2007/0016530	A1	1/2007	Stasi et al.
2003/0149975	A1	8/2003	Eldering et al.	2007/0038567	A1	2/2007	Allaire et al.
2003/0149981	A1	8/2003	Finster et al.	2007/0039023	A1	2/2007	Kataoka
				2007/0078832	A1	4/2007	Ott, IV et al.
				2007/0157221	A1	7/2007	Ou et al.
				2007/0157249	A1	7/2007	Cordray et al.
				2007/0198532	A1*	8/2007	Krikorian ..... G06Q 30/0273
							705/14.69

(56)

**References Cited****U.S. PATENT DOCUMENTS**

2007/0214482	A1	9/2007	Nguyen
2007/0245399	A1	10/2007	Espelien
2007/0250864	A1	10/2007	Perez
2008/0022298	A1	1/2008	Cavicchia
2008/0072260	A1	3/2008	Rosin et al.
2008/0127257	A1	5/2008	Kvache
2008/0141325	A1	6/2008	Ludvig et al.
2008/0148317	A1	6/2008	Opaluch
2008/0155613	A1	6/2008	Benya et al.
2008/0163292	A1	7/2008	Stallworth
2008/0163330	A1	7/2008	Sparrell
2008/0189749	A1	8/2008	White et al.
2008/0222687	A1	9/2008	Edry
2008/0276277	A1	11/2008	Ahn et al.
2009/0158334	A1	6/2009	Rodriguez et al.
2010/0138863	A1	6/2010	Perez
2010/0153999	A1	6/2010	Yates
2010/0175090	A1	7/2010	Cordray
2010/0211975	A1	8/2010	Boyer et al.
2010/0319040	A1	12/2010	Perez
2010/0325655	A1	12/2010	Perez
2011/0030012	A1	2/2011	Perez
2011/0030013	A1	2/2011	Perez
2011/0166918	A1	7/2011	Allaire et al.
2011/0191163	A1	8/2011	Allaire et al.
2013/0125158	A1	5/2013	Brown
2013/0254804	A1	9/2013	Perez
2013/0254809	A1	9/2013	Perez
2013/0254814	A1	9/2013	Perez
2014/0344859	A1	11/2014	Krikorian et al.
2015/0128192	A1	5/2015	Perez
2015/0237403	A1	8/2015	Perez
2015/0245099	A1	8/2015	Perez
2015/0264440	A1	9/2015	Perez
2015/0281792	A1	10/2015	Gaydou et al.
2015/0358649	A1	12/2015	Perez
2015/0358682	A1	12/2015	Perez
2015/0358683	A1	12/2015	Perez
2016/0094870	A1	3/2016	Drope
2017/0295387	A1	10/2017	Akadiri

**FOREIGN PATENT DOCUMENTS**

JP	07-284035	10/1995
JP	H9-102827	A 4/1997
JP	H10-155131	A 6/1998
JP	11-150692	6/1999
JP	03-116121	4/2003
WO	89/12896	A1 12/1989
WO	90/15507	A1 12/1990
WO	9406084	A1 3/1994
WO	97/18636	A2 5/1997
WO	98/10589	A1 3/1998
WO	99/10822	A1 3/1999
WO	99/41684	A1 8/1999
WO	9950778	A1 10/1999
WO	01/010124	A1 2/2001
WO	01/010127	A1 2/2001
WO	WO01022688	3/2001
WO	WO01038960	5/2001
WO	2002008948	A2 1/2002
WO	03/052572	A1 6/2003
WO	WO03052572	6/2003
WO	WO03069457	8/2003
WO	WO 2007/021974	A2 2/2007

**OTHER PUBLICATIONS**

TimeWarner, Time Warner Cable Launches Quick Clips, <http://www.timewarner.com/newsroom/press-releases/2006/09/28/time-warner-cable-launches-quick-clips> (published Sep. 28, 2006, last visited Jun. 26, 2015).

Time Warner Cable, Photos & Video Go from Digital Cameras to Television with Free, New Time Warner Cable Product, [http://www.timewarnercable.com/en/about-us/press/photos\\_video\\_go\\_fromdigitalcamerastotelevisionwithfreenewtimewar.html](http://www.timewarnercable.com/en/about-us/press/photos_video_go_fromdigitalcamerastotelevisionwithfreenewtimewar.html) (published Apr. 27, 2007, last visited Jun. 26, 2015).

Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474), Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (5 pgs).

Memorandum in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 474-1), Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (49 pgs).

Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 475), Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (12 pgs).

Declaration of Nathan L. Brown (ECF 475-1), Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (6 pgs).

Exhibits 1 (ECF 475-2), 4 (ECF 475-5), 5 (ECF 475-6), and 6 (ECF 475-7) to Concise Statement of Facts in Support of Defendants Oceanic Time Warner Cable LLC and Time Warner Cable Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 1:14-cv-00169 (D. Haw. Aug. 10, 2015) (133 pgs).

Plaintiff's Opposition to Defendants Time Warner Cable, Inc. and Oceanic Time Warner Cable, LLC's Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336 (ECF 561), Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (52 pgs).

Plaintiff Broadband iTV, Inc.'s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.'s Concise Statement of Facts (ECF 562), Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Declaration of Keith A. Jones (ECF 562-1), Inc.'s Concise Statement of Facts, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (8 pgs).

Exhibits 1-10 (ECF 562-2-ECF-11), 12 (ECF 562-13), 14 (ECF 562-15), 16-17 (ECF 562-17-562-18), and 19-20 (ECF 562-20-562-21) to Plaintiff Broadband iTV, Inc.'s Concise Statement of Facts in Opposition to Defendants Oceanic Time Warner Cable and Time Warner Cable, Inc.'s Concise Statement of Facts, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 1:14-cv-00169 (D. Haw. Aug. 27, 2015) (508 pgs).

Order Granting in Part and Denying in Part Defendants Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc.'s Motion for Summary Judgment Regarding Invalidity of U.S. Pat. No. 7,631,336, Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc., No. 15-00131 (D. Haw. Sep. 29, 2015) (77 pgs).

Judgment, Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc., No. 15-00131 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc., No. 15-00131 (D. Haw. Oct. 9, 2015) (4 pgs).

Order Granting Defendant Hawaiian Telcom, Inc.'s Motion for Summary Judgment of Invalidity Under 35 U.S.C. § 101, Broadband iTV, Inc. v. Hawaiian Telcom, Inc., No. 14-00169 (D. Haw. Sep. 29, 2015) (43 pgs).

Judgment, Broadband iTV, Inc. v. Hawaiian Telcom, Inc., No. 14-00169 (D. Haw. Sep. 29, 2015) (2 pgs).

Plaintiff's Notice of Appeal; Certificate of Service, Broadband iTV, Inc. v. Hawaiian Telcom, Inc., No. 14-00169 (D. Haw. Oct. 9, 2015) (4 pgs).

Brief of Amici Curiae Broadband iTV, Inc., Double Rock Corporation, Island Intellectual Property, LLC, Access Control Advantage, Inc., and Fairway Financial U.S., Inc. In Support of Appellants, Netflix, Inc. v. Rovi Corporation et al., No. 2015-1917 (Fed. Cir. Dec. 18, 2015).

(56)

**References Cited****OTHER PUBLICATIONS**

Consolidated Brief for Appellant Broadband iTV, Inc., Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 16-1082 (Fed. Cir. Jan. 21, 2016).

Amicus Brief of United Inventors Association of the United States of America in Support of Appellant Broadband iTV, Inc. and Reversal, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 16-1082 (Fed. Cir. Jan. 27, 2016).

Amicus Brief by Tranxition, Inc., Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 16-1082 (Fed. Cir. Jan. 28, 2016).

EPO Communication for European Application No. 08726793.6, dated May 30, 2016.

EPO Communication for European Application No. 08768802.4, dated May 30, 2016.

VDO expands Webcasting possibilities, Broadcasting & Cable, Nov. 11, 1996.

Jose Alvear, "Web Developer.com Guide to Streaming Multimedia", Chapters 9 and 11, 1998.

Business Wire, "Ivex Announces ViewOps Internet Video Service; Allows Business Managers to View and Manage Operations Online," May 2, 2000.

Notice of Entry of Judgment Without Opinion for Case No. 2016-1082 of the United States Court of Appeals for the Federal Circuit dated Sep. 26, 2016.

Judgment, Broadband iTV, Inc. v. Hawaiian Telcom, Inc., Oceanic Time Warner Cable, LLC and Time Warner Cable, Inc., Nos. 2016-1082, 2016-1083 (CAFC Sep. 26, 2016) (2 pgs).

Affidavit of Milton Diaz Perez Under 37 C.F.R. 132, Jan. 20, 2012, submitted in U.S. Appl. No. 11/768,895.

Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al.; BBiTV Petition for a Writ of Certiorari (Sup. Ct. Apr. 13, 2017 (No. 16-1241)).

Order List 581 U.S. Sup. Ct.—Monday, May 22, 2017—Broadband Itv, Inc. v. Hawaiian Telcom, Inc., et al., Petition for Writ of Certiorari Denied (p. 7).

Ciciora, Farmer, & Large, Modern Cable Television Technology (Morgan Kaufmann Publishers, Inc. 1999), 18 pages.

International Search Report, dated Mar. 6, 2006, in PCT International Application US2005/027376, of Broadband iTV, Inc.

International Search Report, dated Sep. 15, 2009, in PCT International Application US2008/003341, of Broadband iTV, Inc.

International Search Report, dated Nov. 28, 2008, in PCT International Application US2008/007980, of Broadband iTV, Inc.

The Industry Standard, "Web Entertainment Gets Personal", Jan 10, 2000, [www.theindustry.com](http://www.theindustry.com).

Affidavit of Milton Diaz Perez Under C.F.R. 132, Mar. 9, 2009, submitted in U.S. Appl. No. 10/909,192, filed Jul. 3, 2004.

Affidavit of Milton Diaz Perez, Ex. A, Wikipedia, "Cable Television in the United States", history, last modified Jan. 17, 2009, pp. 1-7, [http://en.wikipedia.org/wiki/Cable\\_Television\\_in\\_the\\_United\\_States](http://en.wikipedia.org/wiki/Cable_Television_in_the_United_States).

Affidavit of Milton Diaz Perez, Ex. B, Wikipedia, "Internet Television", history, last modified Feb. 5, 2009, pp. 1-4, [http://en.wikipedia.org/wiki/Internet\\_TV](http://en.wikipedia.org/wiki/Internet_TV).

Affidavit of Milton Diaz Perez, Ex. C, Wikipedia, "Content Delivery Network", history, last modified Feb. 10, 2009, pp. 1-6, [http://en.wikipedia.org/wiki/Content\\_Delivery\\_Network](http://en.wikipedia.org/wiki/Content_Delivery_Network).

Affidavit of Milton Diaz Perez, Ex. D, Wikipedia, "Walled Garden (technology)", history, last modified Feb. 3, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/Walled\\_Garden\\_\(technology\)](http://en.wikipedia.org/wiki/Walled_Garden_(technology)).

Affidavit of Milton Diaz Perez, Ex. E, Wikipedia, "User-generated TV", history, last modified Feb. 10, 2009, pp. 1-2, [http://en.wikipedia.org/wiki/User-generated\\_TV](http://en.wikipedia.org/wiki/User-generated_TV).

Affidavit of Milton Diaz Perez, Ex. E1, Wikipedia, "ZeD", history, last modified Jan. 5, 2009, pp. 1-7, <http://en.wikipedia.org/wiki/Zed>.

Affidavit of Milton Diaz Perez, Ex. E2, Wikipedia, "Current TV", history, last modified Feb. 5, 2009, pp. 1-5, [http://en.wikipedia.org/wiki/Current\\_TV](http://en.wikipedia.org/wiki/Current_TV).

Affidavit of Milton Diaz Perez, Ex. E3, OUTLOUD.TV, tripatlas, circa 2003, <http://tripatlas.com/Outloud.tv>.

VOD Metadata—Project Primer, Overview of VOD Content Specification 1.0, 1.1, and 2.0, published by Cable Labs, circa 2002-2007, <http://www.cablelabs.com/projects/metadata/primer>.

xOD Capsule, issue dated Apr. 11, 2006, includes article "Bresnan Taps CMC for VOD", published by Communications, Engineering & Design Magazine, <http://www.cedmagazine.com/newsletter.aspx?id=67468>.

Comcast Media Center, Content Gateway, Content Distribution website, circa 2010, <http://www.comcastmediacenter.com/content-gateway>.

Petition for Inter Partes Review, IPR2014-01222, Unified Patents, Inc. v. Broadband iTV, Inc., re U.S. Pat. No. 7,631,336.

Petition for Covered Business Method Review, CBM2014-00189, Hawaiian Telcom, Inc. v. Broadband iTV, Inc., re U.S. Pat. No. 7,631,336.

Patent Owner's Preliminary Response, Jan. 2, 2015, CBM2014-00189, Hawaiian Telcom, Inc. v. Broadband iTV, Inc., re U.S. Pat. No. 7,631,336.

Decision Denying Institution of Inter Partes Review, Jan. 5, 2015, IPR2014-01222, Unified Patents v. Broadband iTV, Inc., re U.S. Pat. No. 7,631,336.

Adams, Open Cable Architecture (Cisco Press 2000), Chapter 8-16. ATSC Standard: Program and System Information Protocol for Terrestrial Broadcast and Cable (PSIP) (Dec. 23, 1997).

Attack of the \$500 Killer Network Computers: Time-Warner Cable's Full Service Network, Network Computing (Aug. 19, 2000) Internet Archive, <https://web.archive.org/web/20000819050301/http://www.networkcomputing.com/616/616tw.html>.

CableLabs Video-On-Demand Asset Distribution Interface Specification, Version 1.1 (Sep. 27, 2002).

CableLabs Video-On-Demand Content Specification Version 1.1 (Jan. 7, 2004).

Declaration of Milton Diaz Perez, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 14-cv-00169-ACK-KSC (D. Haw. Mar. 2, 2015).

Defendants' Joint Preliminary Invalidity Contentions, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit A, Defendants' Joint Preliminary Invalidity Contentions, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit B, Defendants' Joint Preliminary Invalidity Contentions, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit C, Defendants' Joint Preliminary Invalidity Contentions, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit E, Defendants' Joint Preliminary Invalidity Contentions, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit F, Defendants' Joint Preliminary Invalidity Contentions, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Exhibit G, Defendants' Joint Preliminary Invalidity Contentions, Broadband iTV, Inc. v. Hawaiian Telcom, Inc. et al., No. 14-cv-00169-ACK-KSC (D. Haw. Feb. 20, 2015).

Fickle et al., U.S. Appl. No. 60/429,966 (dated Nov. 27, 2002).

Full Service Network and The Orlando Sentinel add interactive dining guide to GOtv, The Free Library, <http://www.thefreelibrary.com/Full+Service+Network+and+The+Orlando+Sentinel+add+interactive+dining+...-a018299720> (published May 20, 1996, last visited Mar. 4, 2015).

Full Service Network(FSN) in Orlando, Florida, Hong Kong University of Science and Technology (May 4, 1997) Internet Archive, <https://web.archive.org/web/19970504203603/http://www.ust.hk/~webiway/content/USA/Trial/fsn.html>.

Full Service Network, Time Warner Cable, <http://m.history.timewarnercable.com/the-twc-story/era-1990-1995/Story.aspx?story=56> (last visited Mar. 4, 2015).

Full Service Network, Wikipedia, [http://en.wikipedia.org/w/index.php?title=Full\\_Service\\_Network&printable=yes](http://en.wikipedia.org/w/index.php?title=Full_Service_Network&printable=yes) (last visited Mar. 4, 2015).

(56)

**References Cited****OTHER PUBLICATIONS**

Tanenbaum, Computer Networks, 4th ed. (Prentice Hall PTR 2003), pp. 1-14.

Time Warner Cable, DRAFT Asset Distribution System ("Catcher's Mitt") Functional Requirements, Version 1.0 (Jan. 26, 2000).

Time Warner Cable, ISA Data Download Delivery, Version 0.5 (Jun. 3, 2004).

Time Warner Cable, Pegasus Interactive Services Architecture, Version 1.4 (Jun. 5, 2003).

Time Warner Cable, The ISA Tutorial, Version 1.0 (Sep. 13, 2003).

Time Warner Cable's Full Service Network connects live to Innovations, AllBusiness (published Apr. 10, 1996, archived Mar. 25, 2008) Internet Archive, <https://web.archive.org/web/20080325024937/http://www.allbusiness.com/media-telecommunications/telecommunications/7218809-1.html>.

Time Warner introduces world's first full service network in Orlando; Network offers First . . . , AllBusiness (published Dec. 14, 1994, archived May 22, 2009) Internet Archive, <https://web.archive.org/web/20090522134111/http://www.allbusiness.com/media-telecommunications/telecommunications/7087127-1.html>.

Time Warner will close its Full Service Network, Orlando Business Journal, <http://www.bizjournals.com/orlando/stories/1997/04/28/daily7.html> (last visited Mar. 4, 2015).

Time Warner's 'Time Machine' for Future Video, The New York Times, <http://www.nytimes.com/.../12/business/time-warner-s-time-machine-for-future-video.html?pagewanted=2&pagewanted=print> (published Dec. 12, 1994, last visited Mar. 4, 2015).

Time Warner Cable, Request for Proposal and Functional Requirements Specification for Video-On-Demand (VOD) Systems, Version 2.0 (Apr. 25, 1997).

Time Warner Cable, Pegasus Movies on Demand Content Specification, Version 1.3 (Sep. 29, 2000).

Time Warner Cable, Pegasus Overall Flow: Movie Delivery, Version 1.0 (Feb. 18, 2004).

If You Liked This, You're Sure to Love That, by Clive Thompson (Nov. 21, 2008), The New York Times Magazine, [https://www.nytimes.com/2008/11/23/magazine/23Netflix-t.html?\\_r=2&hp=&pagewanted=all](https://www.nytimes.com/2008/11/23/magazine/23Netflix-t.html?_r=2&hp=&pagewanted=all), Internet.

Two Decades of Recommender Systems at Amazon.com, Brent Smith (Amazon.com) and Greg Linder (Microsoft) Published by the IEEE Computer Society, <https://pdfs.semanticscholar.org/0f06/d328f6deb44e5e67408e0c16a8c7356330d1.pdf>, Internet.

Evaluating Collaborative Filtering Recommender Systems, Jonathan L. Herlocker (Oregon State University) and Joseph A. Konstan, Loren G. Terveen, and John T. Riedl (University of Minnesota) ACM Transactions on Information Systems, vol. 22, No. 1, Jan. 2004, pp. 5-53.

Netflix Prize: Forum, <http://www.netflixprize.com/community/> (Mar. 6, 2007) Internet Archive, <https://web.archive.org/web/20070306011355/http://www.netflixprize.com:80/community/>.

Netflix Prize, The Netflix Prize Rules, <http://www.netflixprize.com/rules> (Mar. 6, 2007) Internet Archive, <https://web.archive.org/web/20070306011304/http://www.netflixprize.com/rules>.

Netflix Prize: Home; <https://web.archive.org/web/20070306011244/http://www.netflixprize.com:80/index>.

\* cited by examiner



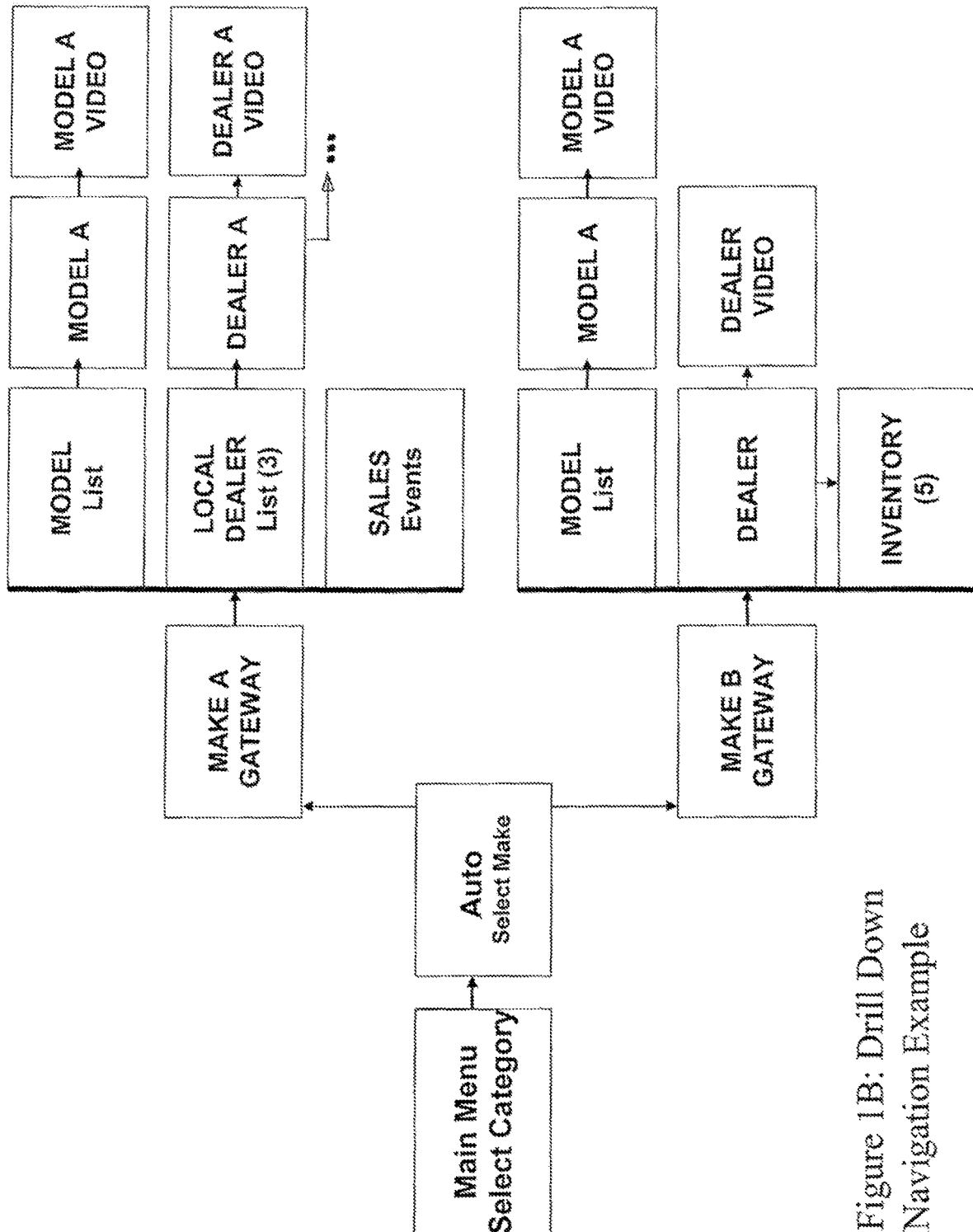
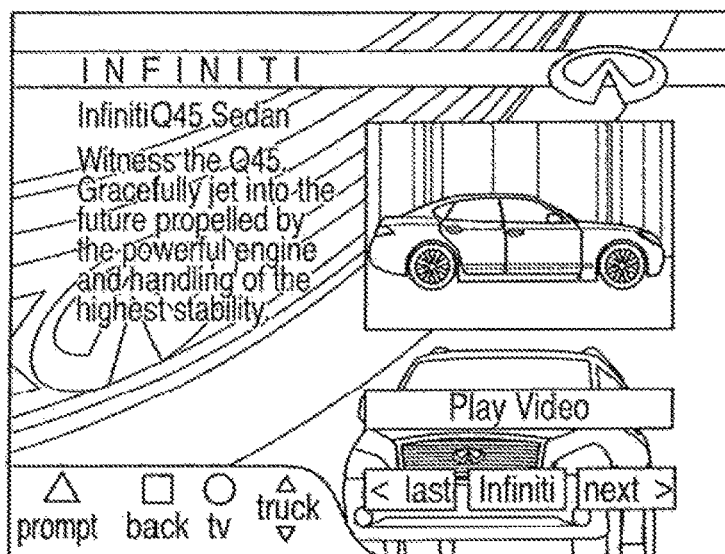


Figure 1B: Drill Down Navigation Example



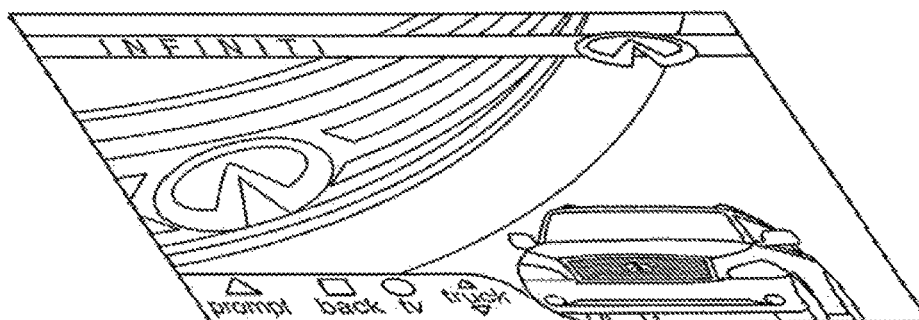
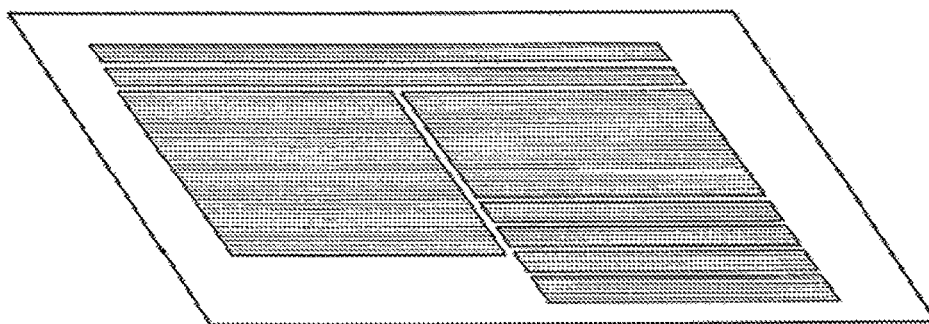
Infiniti Q45 Sedan  
Witness the Q45.  
Gracefully jet into the  
future propelled by  
the powerful engine  
and handling of the  
highest stability.



Play Video

< last Infiniti next >

FIG. 10C





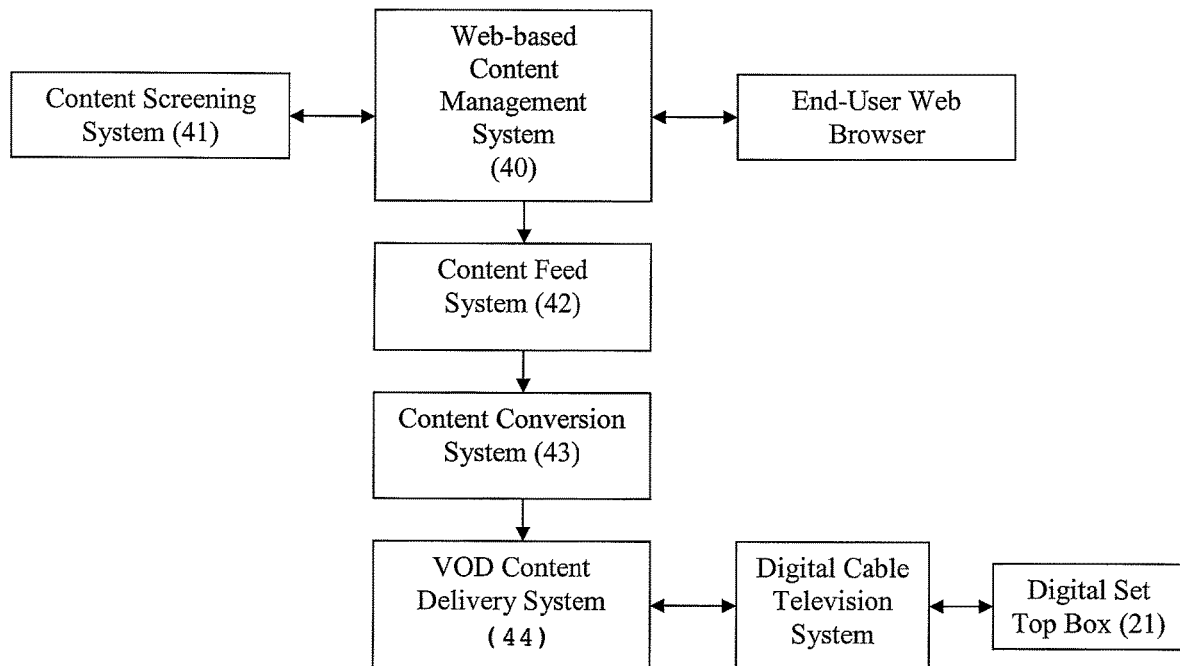


Figure 2A: Classified Ad System, Overall Architecture

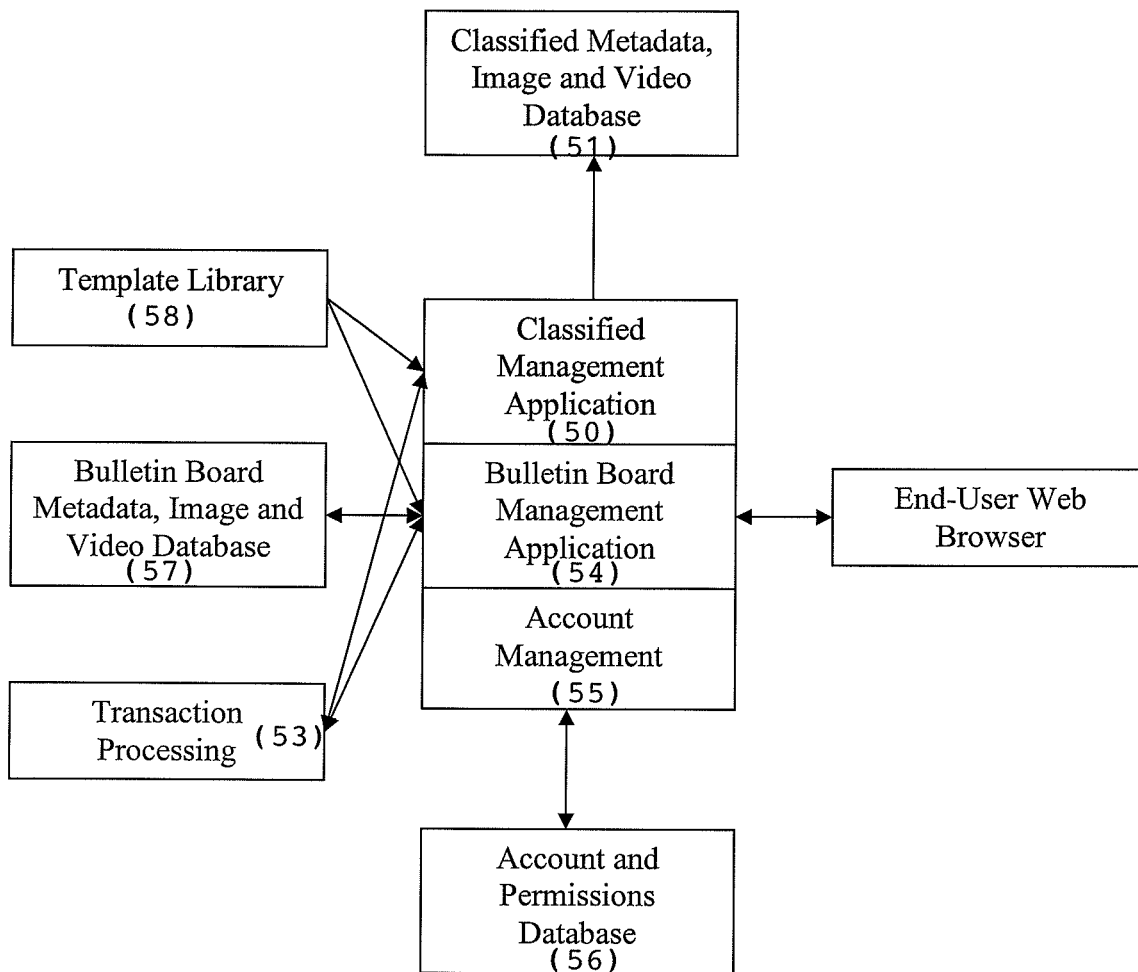


Figure 2B: Web-based Content Management System

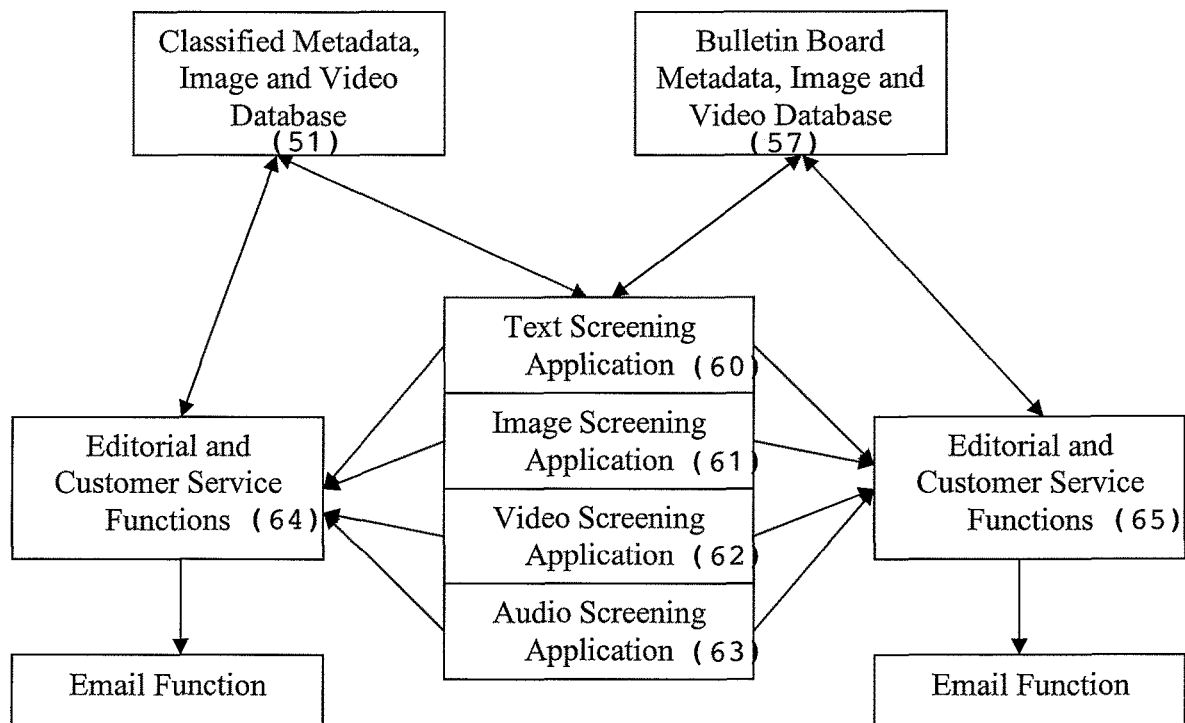


Figure 2C: Content Screening System

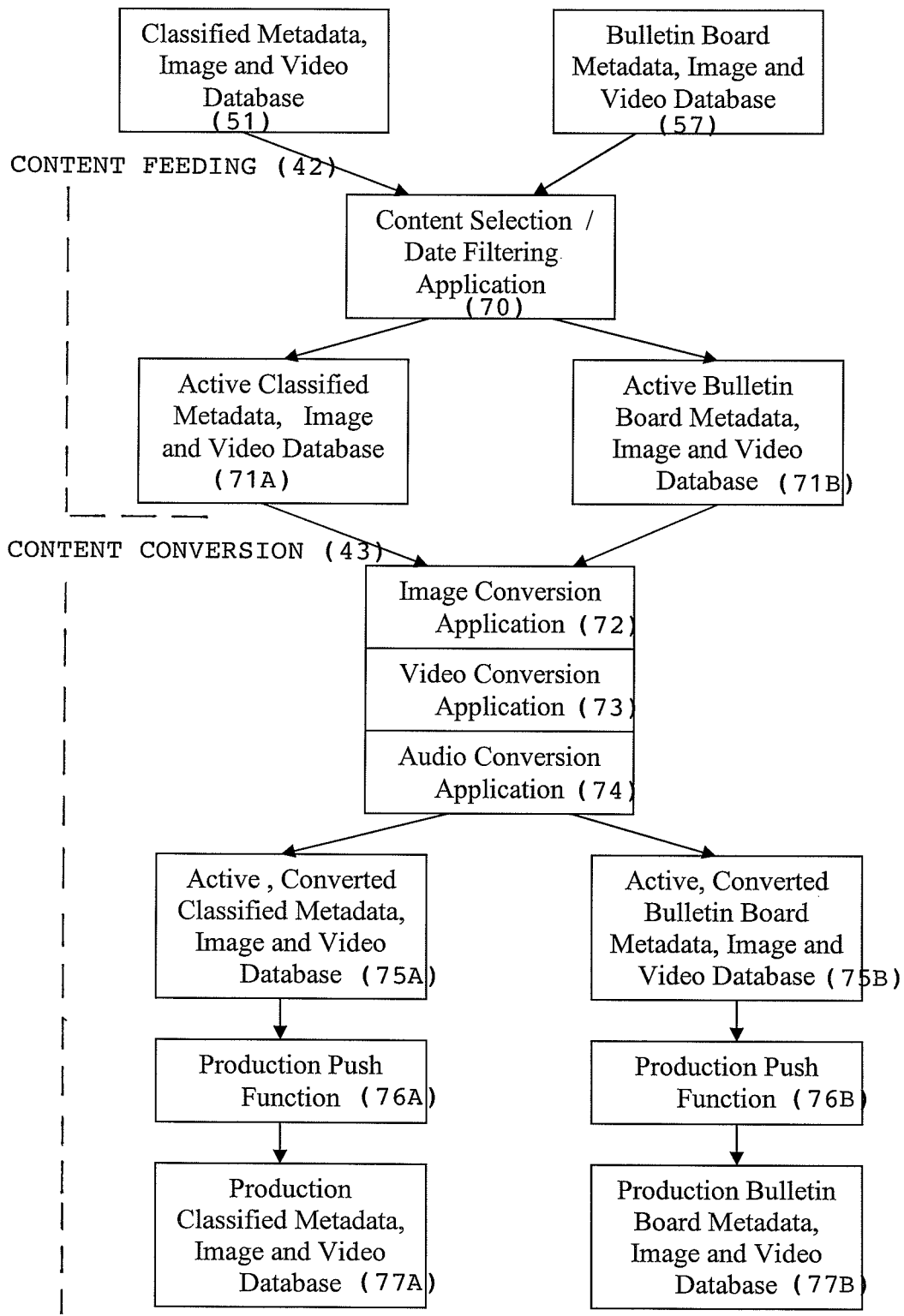


Figure 2D: Content Feed and Conversion System

**VIDEO-ON-DEMAND CONTENT DELIVERY  
SYSTEM FOR PROVIDING  
VIDEO-ON-DEMAND SERVICES TO TV  
SERVICE SUBSCRIBERS**

**CROSS-REFERENCE TO RELATED  
APPLICATIONS**

This U.S. patent application is a continuation application and claims the benefit of copending U.S. patent application Ser. No. 16/055,988, filed on Aug. 6, 2018, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", which is a continuation application and claims the benefit of U.S. patent application Ser. No. 15/864,561, filed on Jan. 8, 2018, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 10,045,084 on Aug. 7, 2018, which is a continuation application of U.S. patent application Ser. No. 15/589,196, filed on May 8, 2017, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 9,866,910 on Jan. 9, 2018, which is a continuation application of U.S. patent application Ser. No. 15/253,321, filed on Aug. 31, 2016, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICES SUBSCRIBERS", issued as U.S. Pat. No. 9,648,388 on May 9, 2017, which is a continuation application of U.S. patent application Ser. No. 14/978,953, filed on Dec. 22, 2015, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY METHOD FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 9,491,511 on Nov. 8, 2016, which is a continuation application of U.S. patent application Ser. No. 14/706,721, filed on May 7, 2015, of the same inventor and entitled "VIDEO-ON-DEMAND CONTENT DELIVERY METHOD FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS", issued as U.S. Pat. No. 9,338,511 on May 10, 2016, which is a continuation application of U.S. patent application Ser. No. 12/852,663, filed on Aug. 9, 2010, of the same inventor and entitled "SYSTEM FOR ADDING OR UPDATING VIDEO CONTENT FROM INTERNET SOURCES TO EXISTING VIDEO-ON-DEMAND APPLICATION OF A DIGITAL TV SERVICES PROVIDER SYSTEM", issued as U.S. Pat. No. 9,078,016 on Jul. 7, 2015, which is a divisional application of U.S. patent application Ser. No. 11/952,552, filed on Dec. 7, 2007, of the same inventor and entitled "SYSTEM FOR MANAGING, CONVERTING, AND TRANSMITTING VIDEO CONTENT FOR UPLOADING ONLINE TO A DIGITAL TV SERVICES PROVIDER SYSTEM", issued as U.S. Pat. No. 7,774,819 on Aug. 10, 2010, which is a divisional application of U.S. patent application Ser. No. 10/909,192, filed on Jul. 30, 2004, of the same inventor and entitled "SYSTEM AND METHOD FOR MANAGING, CONVERTING AND DISPLAYING VIDEO CONTENT ON A VIDEO-ON-DEMAND PLATFORM, INCLUDING ADS USED FOR DRILL-DOWN NAVIGATION AND CONSUMER-GENERATED CLASSIFIED ADS", issued as U.S. Pat. No. 7,590,997 on Sep. 15, 2009, each of which is hereby incorporated by reference as if fully set forth herein.

**TECHNICAL FIELD**

This invention generally relates to the provision of interactive television services through cable TV infrastructure, and more particularly, to a system and method for managing, converting and displaying video content on a video-on-demand platform, and particularly, advertising displays used for drill-down navigation and displays of consumer-generated classified ads on TV.

**BACKGROUND OF INVENTION**

Cable television (CATV) systems are used to deliver television services to a vast majority of TV-viewing homes in the U.S. and other technologically advanced countries. The typical CATV system has a cable service provider head end equipped with video servers to transmit CATV program signals through distribution lines to local nodes and from there to TV subscriber homes. Within the subscriber homes, the CATV program signals are transmitted to one or more customer-premises TVs which are coupled to external set-top boxes for channel tuning or are equipped with internal cable channel tuners.

Current CATV set-top boxes provide various functions for channel switching and program access between subscribers and the CATV head end. The more advanced digital set-top boxes are individually addressable from the CATV head end, and also allow subscribers to input via remote control units their selection inputs for transmission on a back channel of the connecting cable to the CATV head end, thereby enabling subscribers to access interactive television services and other types of advanced digital TV services. A primary type of interactive television system is referred to generally as a "video-on-demand" (VOD) system, wherein a viewer can enter a selection choice for a video program via the remote control unit to the set-top box and have the desired video program delivered instantaneously for display on the TV. Such VOD applications can include on-demand movies, documentaries, historic sports events, TV programs, infomercials, advertisements, music videos, short-subjects, and even individual screen displays of information. VOD-based interactive television services generally allow a viewer to use the remote control to cursor through an on-screen menu and select from a variety of titles for stored video programs for individual viewing on demand. Advanced remote control units include button controls with VCR-like functions that enable the viewer to start, stop, pause, rewind, or replay a selected video program or segment. In the future, VOD-based interactive television services may be integrated with or delivered with other advanced interactive television services, such as webpage browsing, e-mail, television purchase ("t-commerce") transactions, and multimedia delivery.

With the increasing interactive functionality and customer reach of interactive television services, advertisers and content providers are finding it increasingly attractive to employ on-demand advertising, program content, and TV transactions for home viewers. VOD content delivery platforms are being designed to seamlessly and conveniently deliver a wide range of types of advertising, content, and transaction services on demand to home viewers. An example of an advanced VOD delivery platform is the N-Band™ system offered by Navic Systems, Inc., d/b/a Navic Networks, of Needham, Mass. This is an integrated system which provides an application development platform for third party application developers to develop new VOD service applications, viewer interfaces, and ancillary interactive services

for deployment on VOD channels of CATV operators in cable service areas throughout the U.S. A detailed description of the Navic N-Band system is contained in U.S. Patent Application 2002/066,106, filed on May 30, 2002, which is incorporated herein by reference.

Advanced digital set-top boxes also have the ability to collect data such as a log of channels tuned to and programs watched by the viewer. The set top box can be designed to collect and report this data automatically to the cable head end. At the head end location, the viewer data can be aggregated over many users with personally identifying data removed, and provided to advertisers and program sponsors for information in designing and targeting new ads and programs for viewer preferences, thereby resulting in increased viewership, higher viewer impressions per ad or program, and ultimately increased revenues.

Current VOD ads and program offerings are generally produced for mass audiences. It would be particularly desirable to adapt a VOD delivery platform to deliver ads, promotions, programs, and informational content by allowing viewers to navigate readily and visually to specific items of interest. Such visual navigation for content delivery would be more likely to create a satisfying viewer experience, and also to engage individual viewers in on-demand TV services and transactions. It would also be a particularly desirable to adapt a VOD delivery platform to receive uploads of user ads from individuals such as through an online network for search, navigation, and display to TV subscribers.

#### SUMMARY OF THE INVENTION

In accordance with a first objective of the present invention, a video-on-demand (VOD) content delivery system for delivery templated VOD content comprises:

(a) a VOD Application Server located at a Cable Head End which manages a Database of templates for generating templated VOD content in response to requests for specific video content elements by viewer request signals transmitted from the TV equipment of a viewer to the Cable Head End;

(b) a Video Server for storing video content encoded as video content elements and for supplying a requested video content element in response to the VOD Application Server for delivery to the TV equipment of the viewer; and

(c) an Application Data Center for creating and storing a plurality of different templates ordered in a hierarchy for presentation of video content elements of different selected types categorized in hierarchical order, wherein a template for display of a video content element in a higher level of the hierarchy includes a link to one or more templates and video content elements in a lower level of the hierarchy, said plurality of hierarchically-ordered templates and links being stored in the Database managed by the VOD Application Server, and

(d) wherein said VOD Application Server, in response to viewer request for a selected video content element of a higher order in the hierarchy, retrieves the corresponding template from said Database and corresponding video content element from said Video Server to provide a templated VOD content display on the viewer's TV equipment which includes one or more links to video content elements in a lower order of hierarchy, and upon viewer request selecting a link displayed in the templated VOD content to a video content element in the lower order of hierarchy, retrieves the corresponding template and video content element of lower order hierarchy for display on the viewer's TV equipment,

thereby enabling the viewer to use drill-down navigation through TV displays of templated VOD content.

In a preferred embodiment of the templated VOD content delivery system, the system employs the templated content delivery to create a User Interface for the viewer to navigate through progressively more specific template (display ad) types linked in series to reach an end subject of interest to the viewer. Referred to herein as "Drill-Down Ads," the series of progressively more specific display ad types allow the subscriber to navigate to an end subject of interest while at the same time having a unique visual experience of moving visually through a series of ads mirroring the viewer's path to the end subject of interest.

As an example involving automobile advertising, the User Interface can provide a hierarchical ordering of video display ads that starts with an Auto Maker's ad displayed with links to Model ads. The viewer can select using the remote control unit a specific Model ad which is displayed with links to more specific levels of ads, such as "Custom Packages", "Feature/Options", or "Color/Styling", etc., until it reaches an end subject of interest to the subscriber. The viewer would thus be able to navigate to specific content of interest while traversing through video ad displays of the Auto Maker, Models, Model A, Features, etc. Similarly, the viewer can navigate to specific content of interest while traversing through video ad displays of Local Dealers, Dealer A, Current Sales Promotions, etc. The templated VOD ads are generated dynamically by searching the VOD Application database with each current request by a viewer. This enables the system to dynamically generate and display updated advertising content that remains current. For example, if the Auto Maker changes the Model types available, or if Local Dealer A changes its current sales promotions, that advertiser's ads can be updated with new content and selection options on the system database, and the new templated ads can be generated dynamically, instead of new ads having to be filmed, produced, contracted, and installed with the cable TV company. Many other types of ads, subjects, and other interactive TV applications can be enabled with the use of the Drill-Down Navigation method. The selections or preferences exhibited by viewer navigation paths through the Drill-Down Navigation can also be tracked, profiled, and/or targeted as feedback data to advertisers for fine-tuning Drill-Down ad designs.

In accordance with a second objective of the invention, a video-on-demand (VOD) content delivery system for managing, converting and displaying consumer-generated classified ads on TV comprises:

(a) a Content Management Website for enabling individual users to upload classified ad content on an online network connection from their remote computers, said uploaded classified ad content including associated meta data for identifying the ad content by title and topical area;

(b) a Content Screening Component for receiving the classified ad content uploaded to the Content Management Website and screening the content for objectionable text, audio, video and/or images in the content, and for rejecting said content if objectionable text, audio, video and/or images are found;

(c) a Content Feed Component for automatically transferring the classified ad content screened by the Content Screening Component with the associated meta data and supplying them to a Content Conversion Component;

(d) a Content Conversion Component for automatically converting the transferred classified ad content supplied from the Content Feed Component into a video data format compatible with the VOD content delivery system, and for

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automatically indexing the converted classified ad content in a Video Server database according to title and topical area as specified in the content meta data; and

(e) a VOD Application Server, operatively connected between said Content Conversion Component and a Cable Head End connected via cable connection to the TV equipment of viewers, for delivering from the Cable Head End classified ad title and topical area listings data generated from the meta data for the classified ad content to be displayed on the TV equipment of viewers to enable their searching for classified ads of interest and, in response to a viewer request signal requesting a specific classified ad of interest transmitted via the TV equipment to the Cable Head End, for retrieving the requested classified ad from the Video Server database and transmitting it to be displayed to the viewer on their TV equipment.

In a preferred embodiment of the TV classified ads system, individual users can upload classified ad content via their web browser, including text, audio, video and/or image files in industry-standard file formats, to the Content Management Website. The Content Screening Component is configured to parse the input for objectionable text words in text files, detect objectionable audio words in audio files, and optically recognize objectionable images in graphics or video files. The Content Feed Component automatically transmits classified ad content that has been appropriately contracted for display (paid for, and within the contracted time period) to the Content Conversion Component and the Video Server database. The VOD Application Server responds to requests input by viewers via remote control and retrieves the requested classified ads indexed by their titles and topical areas from the Video Server database to be displayed on the viewer's TV. The Content Management Website can also include functions for: (a) Account Management of user transaction accounts; (b) Content Classification to facilitate user designation of titles and topical areas to uniquely and attractively identify their classified ads; (c) Bulletin Board for creation and management of consumer-generated content related to announcements and other items of general interest to be displayed to viewers in subsidiary displays; and (d) Transaction Processing for the processing the payment of user fees, changes, and refunds in the use of the system.

The foregoing and other objects, features and advantages of the invention are described in further detail below in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1A is a diagram of an overall architecture for a VOD Content Delivery System in accordance with the present invention, FIG. 1B shows an example of Drill-Down Ad navigation, and FIG. 1C shows an example of the templated ad display model.

FIG. 2A is a process flow diagram of the overall architecture of a consumer generated Classified Ad application for the VOD Content Delivery System, FIG. 2B illustrates a Content Management Website for the Classified Ad application, FIG. 2C illustrates a Content Screening Component of the system, and FIG. 2D illustrates a Content Feed and Conversion Components of the system.

#### DETAILED DESCRIPTION OF INVENTION

Referring to FIG. 1A, an overall system architecture for a VOD content delivery system includes a VOD Application Server 10 located at a Cable Head End. The VOD Applica-

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tion Server 10 manages a Database 11 of templates and video content segments from Video Server 12 for generating templated VOD content. The VOD content is generated in response to a viewer request signal transmitted from the Digital Set Top Box 21 of a viewer's TV equipment through the Digital Cable Television System 13 to the VOD Application Server 10 at the Cable Head End. The VOD Application Server 10 may be of the type which enables any compatibly-developed VOD applications to be loaded on and operated on the server. An example of such a VOD Application Server is the Navic N-Band™ server as previously described. Templates for displaying VOD content are created at an Application Data Center 30 and stored in the Database 11 for use by the operative VOD application. The templates may be designed, for example, to present video ad content displays in a logo frame, or to provide navigation buttons and viewer selection options in a frame around currently displayed video content. In the preferred embodiment described in greater detail below, the templates are used to provide navigation aids in a series of progressively more focused ad display types. A Video Content Encoder 31 is used to encode raw video feeds into formatted video content segments compatible with the VOD platform and supply them through a Video Content Distribution Network 14 to the Video Server 12.

In operation, the VOD Application Server 10 operates a VOD application for the CATV system, for example, "automobile infomercials on demand". The viewer sends a request for selected VOD content, such as to see an infomercial on a specific model type made by a specific auto manufacturer, by actuating a viewer request signal by a key press on the viewer's remote control unit transmitting an IR signal to the Set Top Box 21 that is sent on a back channel of the Digital Cable Television System 13 to the VOD Application Server 10 at the Cable Head End. In response to the signal, the VOD Application Server 10 determines the VOD content being requested and retrieves the infomercial ad display template from the Template Database 11 and video content segment from the Video Server 12, in order to generate the corresponding templated VOD content. In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server 10 retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a "drill-down navigation" method to find specific end content of interest.

Referring to FIG. 1B, a preferred embodiment of the templated VOD content delivery system is shown providing a User Interface using Drill-Down Navigation through display ads, such as for automobile infomercials. When the viewer selects a VOD application (channel), such as "Wheels-On-Demand", the viewer's TV displays a Main Menu with buttons inviting the viewer to "Select Category". The viewer can select an "Auto" category, and the TV then displays an "Auto" menu with buttons inviting the viewer to "Select Make", such as Make A, Make B, etc. When the viewer makes a selection, such as Make A, the viewer's TV displays a further menu that is a Gateway into templated VOD content delivery which enables Drill-Down Navigation by templated display ads. Through the Gateway, the VOD Application leaves the Menu mode and enters the Drill Down Navigation mode for successively displays of hierar-

chically-ordered video content which allow the viewer to navigate to progressively more focused content. In this example, the highest level of the hierarchy includes categories for Model, Local Dealer, Sales Events, and/or Inventory. When the viewer selects a category such as "Model" from the Gateway, for example, the VOD Application creates a templated ad display showing video content generic to all models by that automaker framed in a frame which has links (buttons or choices) for a list of the specific models made by that automaker. When the viewer selects the link to a specific model, "Model A" for example, the VOD Application creates a templated ad display showing video content for Model A, and the viewer can then choose to run a long-form infomercial of the Model A video. Alternatively, the Drill-Down Navigation can continue with further levels of specificity, such as "Custom Packages", "Options", "Colors/Stylings", etc. Similarly, the selection of the "Local Dealer" category from the Gateway can bring up a templated ad for local dealers with links to specific local dealers in the viewer's cable service area, and a click on a specific "Dealer A" can bring up a templated ad for Dealer A with further links to more specific content pertaining to Dealer A, such as "Current Sales Promotions", etc.

In this manner, the templated VOD content delivery system allows the viewer to navigate to specific content of high interest to the viewer using the Drill-Down ads as a navigation tool, while at the same time having a unique visual experience of moving through a series of ads mirroring the viewer's path to the subject of interest. The templated VOD ads are generated dynamically by searching the Content/Template database with each request by a viewer, enabling the system to display updated navigation choices and content simply by updating the database with updated links and video content. For example, if the Auto Maker changes the Model types of autos currently available, or if Local Dealer A changes its current sales promotions for autos currently available, that advertiser's ads can be updated with new, template frame navigation links and content, instead of entirely new ads or screen displays having to be shot, produced, contracted, delivered, and programmed with the cable TV company. Many other types of layered or in depth ads, subjects, and interactive TV applications can be enabled with the use of the Drill-Down Navigation method. The selections or preferences exhibited by viewer navigation paths through the Drill-Down Navigation can also be tracked, profiled, and/or targeted as feedback data to advertisers for fine-tuning Drill-Down Navigation designs.

In FIG. 1C, an example illustrates how a templated VOD display is generated in layers. A Background screen provides a basic color, logo, or graphical theme to the display. A selected Template (display frame) appropriate to the navigation level the intended display resides on is layered on the Background. The Template typically has a frame in which defined areas are reserved for text, display image(s), and navigation links (buttons). Finally, the desired content constituted by associated Text, Image & Buttons is retrieved from the database and layered on the Template. The resulting screen display shows the combined background logo or theme, navigation frame, and text, video images, and buttons.

Referring again to FIG. 1A, a Tracking System 15 of conventional type can be installed at the Cable Head End to aggregate non-personal data on what channels and programs viewers watch. For the Drill Down Navigation method, the Tracking System 15 can include tracking of the navigation paths viewers use to find subjects of interest in a VOD

Application. The aggregation of viewer navigation data can indicate what subjects are most popular, whether some subjects are of greater interest to viewers at certain times of day, of certain demographics, or in relation to certain products or services. The VOD Application Server 10 can export the aggregated viewer navigation data to an external Profiling System 16, such as a non-biased or unrelated firm applying profile analysis methods. The results of the Profiling System 16 can be communicated to a Targeting System 17, such as a template design firm or content production company, to fine-tune the presentation of the templated VOD content consistent with viewer preferences or interests. The feedback from the Targeting System can be supplied as feedback to the VOD Application Server to modify the Content/Template Database 11.

Another application for the templated VOD content delivery system can be developed to support video advertisements which link national to local market ad campaigns in "drill-down" fashion. Advertisers, both national and local, can pay for placement of their video advertisements on the system. When the VOD Application is run, the national ads are displayed as a Gateway to linking to the local market ads. In this manner, national ads can be used to transition viewers from general interest in a product to finding specific information about the product available locally.

The templated VOD content delivery system can also support "traffic building" videos, including music videos, that may not generate direct revenue. Once a video is encoded and registered into the system, the management and distribution of the video is conducted through software systems and automated controls. The User Interface provides the user with the ability to navigate and find desired video content. Selection of a category presents the user with a list of video titles available for playback. Categories and title lists can be generated using real-time database queries, allowing for database-driven management of content within the User Interface. The User Interface can also support a search interface which allows the user to search the video content database to generate a list of video titles with specific characteristics.

The core services and functions of the VOD content delivery system can include:

Encoding—converts videos to proper digital format for playback on cable video-on-demand systems, currently MPEG2 format

Metadata Input—allows for the input of descriptive data regarding each video

Packaging—Prepares a data package for transport consisting of the encoded video file and the metadata

Scheduling—Establishes the schedule when packages are to be delivered to cable video-on-demand systems via the transport system

Transport—Digital broadcast medium through which the packages are migrated from the central processing facility to the cable video-on-demand systems.

The core services and functions of the User Interface system can include:

Development of UI "pages"—An Internet-based system is used for the composition, coding and quality assurance of the User Interface images ("pages") that are presented to the user on an interactive basis.

Category and List Presentation—The category lists and title lists presented to the user for navigation and selection can be generated and rendered real-time using database queries against the video metadata database. These lists can also be incorporated in the fully rendered graphics if real-time queries are not required or desired.



Distribution—The UI system supports a scheduling and transport subsystem separate from the video distribution system for the distribution of the UI assets and related set-top box software components to local UI servers installed at the cable head end.

User Input Device—The UI system receives user input and commands from the IR remote control used with the digital set-top box.

User Database—The UI system maintains a database of set-top box addresses that is used to identify the users of the system. This database is the seed for the Profiling Database system described below.

Targeting—The UI system is capable of changing the UI presentation to a specific user based on the information contained in the User Database and the Profiling Database.

The core services and functions of the Tracking System can include:

Consolidation of Video-On-Demand Data—The Tracking System can be made capable of ingesting and consolidating usage data provided by the cable video-on-demand systems. This may be performed through automated interfaces or “feeds”, or it may be performed through the batch processing of data files delivered by the cable operators.

Consolidation of UI Data—The Tracking System can gather and consolidate data from the UI system on an automated basis. The UI system can provide data describing the user commands, behaviors, responses and requests generated by each user while using the User Interface system.

Reporting—The Tracking System can generate reports and analyses of the Video-On-Demand data and the UI data.

Web Interface—The Tracking System can include a Web interface for providing authorized users such as advertisers with access to specific reports.

The core services and functions of the Profiling System can include:

Consolidation of Profiling Data—The Profiling System can be made capable of consolidating on a continuing, automated basis all user-related data requested by advertisers or by the system operator.

Interface to Targeting System—The Profiling System can provide pertinent data as required by the Targeting System within the UI system. This data is used to reformat UI presentations based on the data values.

Interface to Targeting System—The Profiling System data can be accessed and incorporated into the Targeting System.

Support of Private and Public Data—The Profiling System can segregate and maintain as private any data gathered specifically for an advertiser for the use of that advertiser.

As another aspect of the present invention, a VOD content delivery system may be adapted to offer consumer-generated classified ads on TV. The VOD content delivery system is provided with a Content Management frontend to receive consumer input and convert it to video display ads maintained in the system database. Referring to FIG. 2A, a system for managing, converting and displaying individual consumer-generated ads on a VOD content delivery system has a Web-based Content Management System 40 for enabling an individual user to upload content from their computer via a web browser to display a consumer-generated video ad on TV. The uploaded content includes meta data for classifying the video ad by title and topical area(s). Content Screening System 41 is used for screening the content input by the individual user, such as by performing automatic searching for objectionable text, audio, video and/or images and rejecting the content if found objectionable. A Content Feed System 42 is used to automatically transfer consumer-generated content screened through the

Content Screening System 41 to a Content Conversion System 43. This system automatically converts the consumer-generated content supplied by the Content Feed System 42 into video display format compatible with the VOD content delivery system. The converted video ad is indexed by title and classified topical areas according to the meta data supplied by the user, in accordance with the indexing system maintained by the Content Management System. The VOD Content Delivery System 44 operates a Classified Ads VOD Application in which menus for finding classified ads are navigated by viewers, and specific classified ads are delivered through the Digital Cable Television System for display as video ads on the viewer's TV equipment in response to viewer request input by remote control to the Digital Set Top Box 21, as described previously with respect to the operation of the general VOD platform.

Referring to FIG. 2B, the Web-based Content Management System 40 includes a plurality of functional components to allow consumers to create and manage their own classified ads as interactive television content, as well as pay for the distribution of their content within the digital cable television system. A Classified Management Application 50 is used to receive consumer-input content, have it screened (by the Content Screening System 41, not shown), and store it in the Classified Metadata, Image and Video Database 51. Consumer payment for running video ads is handled by the Transaction Processing Component 53. Also included in the Content Management System is an Account Management Component 55 and Account & Permissions Database 56 for management of user accounts for use of the web-based TV Classified Ads system. A Bulletin Board Ads application may be operated in parallel with the TV Classified Ads application. A Bulletin Board Management Application 54 and Database 57 enable the creation and management of consumer-generated content relating to public announcements and other items of general interest for groups, organizations or topics. The preferred VOD Content Delivery System uses templated VOD content, and a Template Library 58 is used to store templates for both the Classified Ads and Bulletin Board Ads applications.

The Account Management Component controls the access by persons to the web-based Content Management System. The Account Management Component identifies persons accessing the system for the first time and allows these persons to register and create an account by providing an account name, password, credit card information and other information required for the payment of fees. The Account Management Component controls the access by registered users to their accounts and manages the privileges and security associated to all accounts. Persons may create accounts for the creation and management of Classified Ads. Accounts capable of accessing the Bulletin Board Management Application may also be assigned by a system administrator in the Account Management Component. Any account capable of accessing the Bulletin Board application can then create and manage bulletin board ads for the assigned bulletin boards.

The Classified Content Management System enables users to upload text, audio, video, and/or image files for classified ads in industry-standard file formats and have it converted into video display ads compatible with the VOD Content Delivery System. Classified ads are searched on the viewer's TV equipment by menus and lists indexed by title and topical areas corresponding to the metadata associated with the classified ads content. Selection of a listed item results in the display of a TV display ad containing uploaded text, images, video and/or audio. Users pay listing fees to the

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operator of the system for maintaining and displaying the classified ads on the digital cable television system.

Significant features of the Classified Ads Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) uploading digital images of the item to the Content Management System; (c) uploading digital video of the item to the Content Management System; (d) uploading digital audio regarding the item to the Content Management System; (e) automated size and resolution processing of digital images uploaded to the system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided content; (j) ability to save classified content in persistent memory or storage for subsequent modification; (k) ability to mark classified content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when a classified content item is to become accessible by users of the interactive television system and the data and time when a classified content item is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that a specific content item is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created classified content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific consumer-generated content by users of the interactive television system; and (p) ability to calculate fees for classified content and submit payment of the fees using the Transaction Processing system.

As noted in (i) above, the Classified Content Management System allows the user to view the content they have composed using the templates. The templates are designed specifically for use on interactive television systems and the user is able to view on the web-interface their content as composed for presentation on television. As noted in (j) above, the Classified Content Management System allows the persistent storage of classified content; although the user is composing interactive television pages using a template system, the content is persistently stored as individual elements to simplify changes by the user and to allow the conversion of the content to different formats as required by different interactive television systems.

The Bulletin Board Content Management System provides the users of the web-based Content Management System with content creation and content management tools for the creation and maintenance of consumer-generated content related to announcements and other informational items of general interest. Bulletin Board content is displayed on the interactive television system as dedicated interactive television screens (bulletin boards), where approved groups, organizations or topics are each assigned a bulletin board for the display of their information. Bulletin Board content is displayed as list items organized within a bulletin board; selection of a list item results in the display of an interactive television screen containing or providing access to the descriptive data, text, images, video and audio regarding the item.

An alternative implementation of a Bulletin Board can display the content as scrolling text, where the user scrolls through the text, or the text scrolls automatically. Bulletin

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Board accounts will pay fees determined by the operator of the system for the distribution of the bulletin board content on the interactive television system for display on the digital cable television system. Significant features of the Bulletin Board Content Management System include: (a) the ability to enter descriptive data and text regarding the item; (b) upload digital images to the content management; (c) upload digital video to the content management system; (d) upload digital audio to the content management system; (e) automated size and resolution processing of digital images uploaded to the system; (f) automated digital format conversion of digital video uploaded to the system; (g) automated digital format conversion of digital audio uploaded to the system; (h) ability for users to select an interactive television screen design (template) from a catalog of available templates; (i) ability to view on a web browser the interactive television template containing the consumer-provided bulletin board content; (j) ability to save bulletin board content in persistent memory or storage for subsequent modification; (k) ability to mark bulletin board content as completed and ready for submission to the interactive television system; (l) ability to specify the date and time when specific bulletin board content is to become accessible by users of the interactive television system and the data and time when specific bulletin board content is to be removed from display on the interactive television system; (m) ability to notify the user through email or other communication system that specific bulletin board content is scheduled to be displayed or removed from the interactive television system; (n) ability to modify and resubmit previously created bulletin board content for display on the interactive television system; (o) ability to access viewing data generated by the Tracking System regarding access and use of specific bulletin board content by users of the interactive television system; and (p) ability to calculate fees for bulletin board content and submit payment of the fees in conjunction with the Transaction Processing component.

The Transaction Processing component allows users of the Classified Content Management System and Bulletin Board Content Management System to determine and pay for any fees resulting from their use of these systems. The Transaction Processing component will allow users to pay for fees using credit cards or other supported payment methods. Significant features of the Transaction Processing component include: (a) ability to maintain business rules for use by the Transaction Processing system to determine fees based on user type and content type; (b) ability to maintain business rules for one or more payment methods for use by the Transaction Processing system in handling the settlement of fees; (c) ability to maintain business rules for user account and payment settlement conditions such as delinquency and lack-of-credit for use by the Transaction Processing system in determining user account privileges and content status; and, (d) ability to process payment of fees in real-time for payment methods that support real-time settlement.

Referring to FIG. 2C, the Content Screening System (41) is comprised of a Text Screening Application 60 which searches for objectionable words or phrases, an Image Screening Application 61 which searches for objectionable graphic images, a Video Screening Application 62 which searches for objectionable images or audio words or phrases in video segments, and an Audio Screening Application 63 which searches for objectionable words or phrases in audio segments. The Content Screening System can be used for both Classified Ads content and Bulletin Board content. Content that has been screened by the Content Screening

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System is then transferred to the aforementioned Classified Ads Database **51** or the Bulletin Board Content Database **57**. The system also has component **64** for Editorial and Customer Service Functions for Classified Ads, and component **65** similarly for Bulletin Board content. These can each include an Email Function to send confirmations of input, reasons for rejection of posting, suggested corrections, further processing, and posting of content to consumers using the system.

Significant features of the Content Screening System include: (a) ability to maintain a library of objectionable or illegal words and phrases for use in the screening of text; (b) ability to perform automated analysis of user content text using the text library as an input and alert system administration personnel to the use of objectionable or illegal content and the use of unknown and suspect words or phrases; (c) ability to maintain a library of objectionable or illegal image elements for use in the screening of images; (d) ability to perform automated image recognition analysis against user content images using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (e) ability to maintain a library of objectionable or illegal image elements for use in the screening of video; (f) ability to perform automated image recognition analysis against user content video using the library of image elements as an input and alert system administration personnel to the use of objectionable or illegal content; (g) ability to maintain a library of objectionable or illegal audio elements for use in the screening of audio; (h) ability to perform automated audio analysis against user content audio using the library of audio elements as an input and alert system administration personnel to the use of objectionable or illegal content; and (i) ability to save screened content in persistent memory or storage for subsequent processing. Content Screening is automatically performed with the Content Management System **40** during the user process of submitting and/or creating consumer-generated content or may be performed as a process subsequent to the creation of content by the user.

Referring to FIG. 2D, the Content Feed System **42** and the Content Conversion System **43** provide for the transfer of user content from the Content Screening System and conversion to video content format compatible with the VOD Content Delivery System **44**. The Content Feed System **42** has a Content Selection/Date Filtering Application which selects consumer-generated content uploaded to the system that is within the dates contracted for posting and display of the content as Classified Ads or on Bulletin Boards. Content within the active date range is transferred to the Active Classified Ads Database **71A** or the Active Bulletin Board Database **71B**.

The Content Conversion System receives consumer-generated content in industry standard formats or created in viewable format (HTML) on the web-based input system and converts the content into formats compatible with the VOD Content Delivery System and for display on viewers' televisions. The Content Conversion System **43** has an Image Conversion Application **72** which converts consumer-uploaded image files (in industry-standard formats such as JPEG, GIF, TIFF, BMP, PDF, PPT, etc.) into VOD content format, a Video Conversion Application **73** which converts consumer-uploaded video files into VOD content format, and an Audio Conversion Application **74** which converts consumer-uploaded audio files into VOD content format. Content converted to VOD content format is stored in the Active Converted Classified Ads Database **75A** or the Active Converted Bulletin Board Database **75B**. The content

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is subject to a further Production Push Function **76A**, **76B** and stored in the Production Classified Ads Database **77A** or the Production Bulletin Board Database **77B**, if any presentation formatting, date stamping, template framing, or other system editing is required by the system.

Significant features of the Content Feed System include: (a) ability to select user content for submission to the Content Conversion System through the testing of appropriate parameters including the date and time information contained in the user content; (b) ability to appropriately package the elements of the user content to permit the efficient transfer of these content elements to the Content Conversion System through an Application Program Interface or other interface; (c) ability to create, maintain and execute a schedule for when the Content Feed System will execute on an automatic basis for the automatic transfer of consumer-generated content to the Content Conversion System; and, (d) ability to execute the functions of the Content Feed System on a manual basis in the presence or absence of a schedule. The Content Feed System may be able to package and distribute content to single or multiple Content Conversion Systems.

Significant features of the Content Conversion system include: (a) ability to receive content packages delivered by the Content Feed System through an Application Program Interface or other interface; (b) ability to process the elements of consumer-generated content into data, text, graphic, video and audio elements that are compatible with the interactive television system and maintain the content presentation created by the user on the web-based Content Management System; (c) ability to save reformatted content in persistent memory or storage for subsequent distribution and use by the interactive television system; and, (d) ability to inform the interactive television system that consumer-generated content is available for distribution and use. The Content Conversion System may be added as a component system of the VOD Content Delivery System, or it may be implemented as a wholly separate system that connects to the VOD Content Delivery System through an Application Program Interface or other interface. When implemented as a system that is separate from the VOD Content Delivery System, it is possible to support multiple, different interactive television systems by either (a) incorporating multiple formatting requirements into a single instance of the Content Conversion System or (b) creating multiple Content Conversion Systems, each supporting the formatting requirements for a specific interactive television system. Either implementation allows for a single instance of consumer-generated content that is created and maintained using the web-based Content Management System to be distributed and displayed on multiple, different interactive television systems with different formatting requirements.

The VOD Content Delivery System **44**, as described previously, provides for the distribution of screened, converted, properly formatted consumer-generated content to viewers' televisions, typically through the use of digital set-top boxes connected to a digital cable television system capable of supporting real-time two-way data transfer between the set-top box and the Cable Head End. Significant features of the VOD Content Delivery System include: (a) ability to receive properly formatted content from the Content Conversion System; (b) ability to distribute said content over a digital cable television system and display this content on television as an interactive television presentation; (c) ability to receive user commands generated by an infrared remote control device, keyboard or other device; (d) ability to respond to the user commands by displaying

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appropriate content or executing desired functionality; and, (e) ability to generate and collect data regarding the user sessions and the viewing data regarding consumer-generated content on the interactive television system and make this data accessible to the Tracking System. The VOD Content Delivery System can employ templated VOD content delivery, as described previously with respect to FIG. 1A, enabling use of the Drill Down Navigation method in which viewers can navigate visually through classified ad hierarchical categories to specific titles or content.

The VOD Content Delivery System for the Classified Ads application can also employ the Tracking System 15 for the collection and consolidation of viewing data generated by the interactive television system and the generation of reports against this viewing data. For example, the Tracking System can track the number of viewer requests for viewing that a classified ad received in a given period and calculate billing charges accordingly. The Tracking System can make this information available to users of the Content Management System as well as to system administrative personnel performing general analysis of interactive television services and associated content. Significant features of the Tracking System include: (a) ability to access and process the data generated by the Classified Ads application; (b) ability to form summaries of the viewing data against desired parameters; (c) ability to save data, summaries and reports in persistent memory or storage for subsequent modification or access; (d) ability to make data, summaries and reports accessible by users of the web-based Content Management System, restricting the data accessible by any specific user to data regarding the content created by that user account on the Content Management System; and, (e) ability to make data, summaries and reports accessible by to system administration personnel.

It is understood that many modifications and variations may be devised given the above description of the principles of the invention. It is intended that all such modifications and variations be considered as within the spirit and scope of this invention, as defined in the following claims.

What is claimed is:

1. A video-on-demand application server system comprising one or more computers and computer-readable memory operatively connected to the one or more computers of the video-on-demand application server system, and programmed to perform at least the following steps:

(a) receiving, by the video-on-demand application server system from a Web-based content management system, first video-on-demand application-readable metadata associated with first video content and usable to generate a video-on-demand content menu,

wherein the first video-on-demand application-readable metadata comprises:

- (1) first title information comprising a first title, and
- (2) first content provider designated hierarchically arranged category information and subcategory information to specify a location of the first title information for the video content in a video-on-demand application, the first content provider designated category information and subcategory information associated with the first title information of the first video content using a same hierarchical structure of categories and subcategories as is to be used for placement of the first title information in the video-on-demand content menu;

wherein the received first video content was uploaded to the Web-based content management system by a content provider device associated with a first video content provider via the Internet in a digital video format,

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along with the associated first video-on-demand application-readable metadata including first title information, and first content provider designated hierarchically arranged category information and subcategory information, designated by the first video content provider, to specify a hierarchical location of the first title of the first video content within the video-on-demand content menu using first category information and first subcategory information associated with the first title information, and further including first time information for availability of the first video content for scheduling of viewing of the first video content through the video-on-demand application;

(b) generating, by the video-on-demand application server system, video-on-demand content menu information data, including at least the first video-on-demand application-readable metadata associated with the first video content and usable to populate the video-on-demand content menu;

(c) sending, from the video-on-demand application server system to a respective set top box operatively connected to respective television equipment of a respective television service subscriber the generated video-on-demand content menu information data;

(d) generating, at the respective set-top box, using the video-on-demand content menu information data, the video-on-demand content menu for navigating through titles, including the first title of the first video content, by hierarchically-arranged category information and subcategory information, including at least the first category information and the first subcategory information in order to locate a respective one of the titles whose associated video content is desired for viewing on respective television equipment,

wherein the video-on-demand content menu lists the titles using the same hierarchical structure of category information and subcategory information as was designated by one or more video content providers, including the first video content provider, in the uploaded first video-on-demand application-readable metadata for the respective video content, wherein a plurality of different display templates, including a first display template, are accessible,

wherein which titles are available for selection from the video-on-demand content menu, at a respective time, is based at least in part on respective time information during which the respective video content associated with the respective time information can be accessed;

(e) receiving, by the video-on-demand application server system from the respective set top box, an electronic request for the first video content associated with the selected first title for display on the television equipment of the television service subscriber in response to the respective television service subscriber selecting, via a television control unit in communication with the respective set top box, the respective title associated with the video content from the hierarchically-arranged category information and subcategory information of the video-on-demand content menu;

(f) causing, by the video-on-demand application server system, to be transmitted to the respective set top box from a video server, the selected first video content for display on the respective TV equipment.

2. The video-on-demand application server system of claim 1, wherein the television control unit is a remote control unit.

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3. The video-on-demand application server system of claim 1, wherein at least some of the plurality of different display templates correspond to different levels of the hierarchical structure of the respective category information and subcategory information.

4. The video-on-demand application server system of claim 1, wherein the at least one of the plurality of different display templates is configured to display a logo frame.

5. The video-on-demand application server system of claim 1, wherein the at least one of the plurality of different display templates is configured to provide navigation buttons.

6. The video-on-demand application server system of claim 1, wherein the at least one of the plurality of different display templates is configured to provide viewer selection options.

7. The video-on-demand application server system of claim 1, wherein the respective category information and subcategory information associated with the first video

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content correspond to one or more topics that pertain to video content from more than one video content provider.

8. The video-on-demand application server system of claim 1, wherein at least one of the plurality of different display templates is used to generate a templated video-on-demand display that comprises a background and a template layer having one or more areas for display of the first video-on-demand application-readable metadata provided by the video content provider.

9. The video-on-demand application server system of claim 1, wherein the video-on-demand content menu comprises a search interface that allows the television service subscriber to search a video content database based on specified characteristics.

10. The video-on-demand application server system of claim 1, wherein the video-on-demand content menu is an interactive user interface.

\* \* \* \* \*

**U.S. District Court [LIVE]  
Western District of Texas (Waco)  
CIVIL DOCKET FOR CASE #: 6:20-cv-00921-ADA**

BROADBAND iTV, INC. v. Amazon.Com, Inc. et al  
Assigned to: Judge Alan D Albright  
Case in other court: USCA Federal Circuit, 23-01107-AK  
Cause: 35:271 Patent Infringement

Date Filed: 10/06/2020  
Date Terminated: 10/24/2022  
Jury Demand: Both  
Nature of Suit: 830 Patent  
Jurisdiction: Federal Question

**Plaintiff**

**BROADBAND iTV, INC.**

represented by **Andrew Hamill**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Suite 250  
Burlingame, CA 94105  
650-825-4300  
Email: [ahamill@krameralberti.com](mailto:ahamill@krameralberti.com)  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**David Alberti**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Suite 250  
Burlingame, CA 94010  
650-825-4300  
Fax: 650-460-8443  
Email: [dalberti@krameralberti.com](mailto:dalberti@krameralberti.com)  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Hong Lin**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Suite 250  
Burlingame, CA 94010  
650-825-4300  
Email: [hlin@krameralberti.com](mailto:hlin@krameralberti.com)  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Jeremiah A. Armstrong**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Suite 250  
Burlingame, CA 94010  
650-825-4300  
Email: [jarmstrong@krameralberti.com](mailto:jarmstrong@krameralberti.com)  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Marc Belloli**  
Bunsow De Mory LLP  
701 El Camino Real  
Redwood City, CA 94063  
650-351-7248  
Fax: 415-426-4744  
Email: [mbelloli@bdiplaw.com](mailto:mbelloli@bdiplaw.com)  
**LEAD ATTORNEY**  
**ATTORNEY TO BE NOTICED**

**Margaret Elizabeth Day**  
Bunsow De Mory LLP  
701 El Camino Real  
Redwood City, CA 94063  
650-351-7248  
Fax: 415-426-4744  
Email: [eday@bdiplaw.com](mailto:eday@bdiplaw.com)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Robert F. Kramer**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Suite 250  
Burlingame, CA 94010  
650-825-4300  
Email: [rkramer@krameralberti.com](mailto:rkramer@krameralberti.com)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Russell S. Tonkovich**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Ste 250  
Burlingame, CA 94010  
650-825-4300  
Email: [rtonkovich@krameralberti.com](mailto:rtonkovich@krameralberti.com)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Ryan Dooley**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Ste 250  
Burlingame, CA 94010  
650-825-4300  
Email: [rdooley@krameralberti.com](mailto:rdooley@krameralberti.com)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Sal Lim**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Suite 250  
Burlingame, CA 94010  
650-825-4300  
Fax: 650-460-8443  
Email: [slim@krameralberti.com](mailto:slim@krameralberti.com)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Sven Raz**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Suite 250  
Burlingame, CA 94010  
650-825-4300  
Email: [sraz@krameralberti.com](mailto:sraz@krameralberti.com)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**Andrea L. Fair**  
Ward, Smith & Hill, PLLC  
PO Box 1231

Longview, TX 75606  
9037576400  
Fax: 903-757-2323  
Email: [andrea@wsfirm.com](mailto:andrea@wsfirm.com)  
*ATTORNEY TO BE NOTICED*

**Claire Abernathy Henry**  
Ward Smith & Hill, PLLC  
1507 Bill Owens Pkwy  
Longview, TX 75604  
903-757-6400  
Fax: 903-757-2323  
Email: [claire@wsfirm.com](mailto:claire@wsfirm.com)  
*ATTORNEY TO BE NOTICED*

**Lawrence Gordon McDonough**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Ste 250  
Burlingame, CA 94010  
650-825-4300  
Fax: 650-460-8443  
Email: [lmcdonough@krameralberti.com](mailto:lmcdonough@krameralberti.com)  
*ATTORNEY TO BE NOTICED*

**Robert Y. Xie**  
Kramer Alberti Lim & Tonkovich LLP  
577 Airport Blvd.  
Suite 250  
Burlingame, CA 94010  
650-825-4300  
Email: [rxie@krameralberti.com](mailto:rxie@krameralberti.com)  
*ATTORNEY TO BE NOTICED*

**Jack Wesley Hill**  
Ward Smith & Hill, PLLC  
1507 Bill Owens Pkwy  
Longview, TX 75604  
(903)757-6400  
Fax: (903)757-2323  
Email: [wh@wsfirm.com](mailto:wh@wsfirm.com)  
*ATTORNEY TO BE NOTICED*

V.

**Defendant**

**Amazon.Com, Inc.**

represented by **Daniel S. Rabinowitz**  
Fenwick & West LLP  
902 Broadway, Suite 14  
New York, NY 10010  
(212) 921-2001  
Fax: (650) 938-5200  
Email: [drabinowitz@fenwick.com](mailto:drabinowitz@fenwick.com)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**Geoffrey R. Miller**  
Fenwick & West LLP  
902 Broadway, Suite 14  
New York, NY 10010  
(212) 430-2600  
Fax: (650) 938-5200  
Email: [gmler@fenwick.com](mailto:gmler@fenwick.com)



*LEAD ATTORNEY  
PRO HAC VICE  
ATTORNEY TO BE NOTICED*

**Gregory Michael Sefian**  
Fenwick & West LLP  
555 California Street, Floor 12  
San Francisco, CA 94104  
(415) 875-2300  
Fax: (415) 281-1350  
Email: [gsefian@fenwick.com](mailto:gsefian@fenwick.com)  
*LEAD ATTORNEY  
PRO HAC VICE  
ATTORNEY TO BE NOTICED*

**Howard Lithaw Lim**  
Fenwick & West LLP  
1191 Second Avenue, 10th Floor  
Seattle, WA 98101  
(206) 389-4510  
Email: [hlim@carterarnett.com](mailto:hlim@carterarnett.com)  
*LEAD ATTORNEY  
PRO HAC VICE  
ATTORNEY TO BE NOTICED*

**J. David Hadden**  
Fenwick & West LLP  
801 California Street  
Mountain View, CA 94041  
(650) 988-8500  
Fax: 650/938-5200  
Email: [dhadden@fenwick.com](mailto:dhadden@fenwick.com)  
*LEAD ATTORNEY  
ATTORNEY TO BE NOTICED*

**Jeffrey Ware**  
Fenwick & West LLP  
1191 Second Avenue, 10th Floor  
Ste 10th Flr.  
Seattle, WA 98101  
206-389-4531  
Email: [jware@fenwick.com](mailto:jware@fenwick.com)  
*LEAD ATTORNEY  
PRO HAC VICE  
ATTORNEY TO BE NOTICED*

**Min Wu**  
Fenwick & West LLP  
555 California Street, 12th floor  
San Francisco, CA 94104  
(415) 875-2300  
Fax: (415) 281-1350  
Email: [min.wu@fenwick.com](mailto:min.wu@fenwick.com)  
*LEAD ATTORNEY  
ATTORNEY TO BE NOTICED*

**Olivia L. Wheeling**  
Fenwick & West LLP  
902 Broadway  
Suite 14  
New York, NY 10010  
212-430-2605  
Email: [owheeling@fenwick.com](mailto:owheeling@fenwick.com)  
*LEAD ATTORNEY  
PRO HAC VICE*

*ATTORNEY TO BE NOTICED*

**Ravi Ranganath**

c/o Fenwick & West LLP  
801 California Street  
Mountain View, CA 95376  
650-988-8500  
Fax: 650-938-5200  
Email: [rranganath@fenwick.com](mailto:rranganath@fenwick.com)

*LEAD ATTORNEY*

*ATTORNEY TO BE NOTICED*

**Saina S. Shamilov**

Fenwick & West LLP  
801 California Street  
Mountain View, CA 94041  
650-988-8500  
Fax: 650-938-5200  
Email: [sshamilov@fenwick.com](mailto:sshamilov@fenwick.com)

*LEAD ATTORNEY*

*ATTORNEY TO BE NOTICED*

**Todd R. Gregorian**

Fenwick & West LLP  
555 California Street  
San Francisco, CA 94104  
(415) 875-2402  
Fax: (415) 281-1350  
Email: [tgregorian@fenwick.com](mailto:tgregorian@fenwick.com)

*LEAD ATTORNEY*

*ATTORNEY TO BE NOTICED*

**Allen Wang**

Fenwick and West LLP  
801 California Street  
Mountain View, CA 94041  
650-988-8500  
Fax: 650-938-5200  
Email: [allen.wang@fenwick.com](mailto:allen.wang@fenwick.com)

*ATTORNEY TO BE NOTICED*

**Deron R Dacus**

The Dacus Firm, P.C.  
821 ESE Loop 323, Suite 430  
Tyler, TX 75701  
903/705-1117  
Fax: 903/581-2543  
Email: [ddacus@dacusfirm.com](mailto:ddacus@dacusfirm.com)

*TERMINATED: 01/05/2021*

*ATTORNEY TO BE NOTICED*

**Eric B. Young**

Fenwick and West LLP  
555 California Street  
12th Floor  
San Francisco, CA 94041  
415-875-2300  
Fax: 415-281-1350  
Email: [eyoung@fenwick.com](mailto:eyoung@fenwick.com)

*ATTORNEY TO BE NOTICED*

**G. Blake Thompson**

Mann Tindel Thompson  
201 E. Howard Street  
Henderson, TX 75654

(903) 657-8540  
Fax: (903) 657-6003  
Email: [blake@themannfirm.com](mailto:blake@themannfirm.com)  
*ATTORNEY TO BE NOTICED*

**J. Mark Mann**  
Mann Tindel Thompson  
201 E. Howard Street  
Henderson, TX 75654  
903/657-8540  
Fax: 903/657-6003  
Email: [mark@themannfirm.com](mailto:mark@themannfirm.com)  
*ATTORNEY TO BE NOTICED*

**Defendant**

**Amazon.com Services LLC**

represented by **Daniel S. Rabinowitz**  
(See above for address)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**Geoffrey R. Miller**  
(See above for address)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**Gregory Michael Sefian**  
(See above for address)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**Howard Lithaw Lim**  
(See above for address)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**J. David Hadden**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Jeffrey Ware**  
(See above for address)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**Min Wu**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Ravi Ranganath**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Saina S. Shamilov**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Todd R. Gregorian**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Allen Wang**  
(See above for address)  
*ATTORNEY TO BE NOTICED*

**Deron R Dacus**  
(See above for address)  
*TERMINATED: 01/05/2021*  
*ATTORNEY TO BE NOTICED*

**Eric B. Young**  
(See above for address)  
*ATTORNEY TO BE NOTICED*

**G. Blake Thompson**  
(See above for address)  
*ATTORNEY TO BE NOTICED*

**J. Mark Mann**  
(See above for address)  
*ATTORNEY TO BE NOTICED*

**Defendant**

**Amazon Web Services, Inc.**

represented by **Daniel S. Rabinowitz**  
(See above for address)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**Geoffrey R. Miller**  
(See above for address)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**Gregory Michael Sefian**  
(See above for address)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

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*PRO HAC VICE*  
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(See above for address)  
*LEAD ATTORNEY*  
*PRO HAC VICE*  
*ATTORNEY TO BE NOTICED*

**Min Wu**

(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Ravi Ranganath**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Saina S. Shamilov**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Todd R. Gregorian**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Allen Wang**  
(See above for address)  
*ATTORNEY TO BE NOTICED*

**Barry K. Shelton**  
Winston & Strawn LLP  
2121 N. Pearl Street  
Suite 900  
Dallas, TX 75201  
214-453-6407  
Fax: 214-453-6400  
Email: [bshelton@winston.com](mailto:bshelton@winston.com)  
*TERMINATED: 04/11/2022*  
*ATTORNEY TO BE NOTICED*

**Deron R Dacus**  
(See above for address)  
*TERMINATED: 01/05/2021*  
*ATTORNEY TO BE NOTICED*

**Eric B. Young**  
(See above for address)  
*ATTORNEY TO BE NOTICED*

**G. Blake Thompson**  
(See above for address)  
*ATTORNEY TO BE NOTICED*

**J. Mark Mann**  
(See above for address)  
*ATTORNEY TO BE NOTICED*

Date Filed	#	Docket Text
10/06/2020	<u>1</u>	COMPLAINT ( Filing fee \$ 400 receipt number 0542-14038688), filed by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Civil Cover Sheet, # <u>2</u> Exhibit A, # <u>3</u> Exhibit B, # <u>4</u> Exhibit C, # <u>5</u> Exhibit D, # <u>6</u> Exhibit E, # <u>7</u> Exhibit F)(Hill, Jack) (Attachment 1 replaced on 10/6/2020) (am). (Entered: 10/06/2020)
10/06/2020	<u>2</u>	RULE 7 DISCLOSURE STATEMENT filed by BROADBAND iTV, INC.. (Hill, Jack) (Entered: 10/06/2020)
10/06/2020	<u>3</u>	Notice of Filing of Patent/Trademark Form (AO 120). AO 120 forwarded to the Director of the U.S. Patent and Trademark Office. (Hill, Jack) (Main Document 3 replaced on 10/6/2020) (am). (Entered: 10/06/2020)

10/06/2020	<u>4</u>	REQUEST FOR ISSUANCE OF SUMMONS by BROADBAND iTV, INC.. (Hill, Jack) (Entered: 10/06/2020)
10/06/2020	<u>5</u>	NOTICE of Attorney Appearance by Andrea L. Fair on behalf of BROADBAND iTV, INC.. Attorney Andrea L. Fair added to party BROADBAND iTV, INC.(pty:pla) (Fair, Andrea) (Entered: 10/06/2020)
10/06/2020	<u>6</u>	NOTICE of Attorney Appearance by Claire Abernathy Henry on behalf of BROADBAND iTV, INC.. Attorney Claire Abernathy Henry added to party BROADBAND iTV, INC.(pty:pla) (Henry, Claire) (Entered: 10/06/2020)
10/06/2020		Document Civil Cover Sheet and the AO-120 was not flattened. Please notice that all documents are REQUIRED to be flattened upon filing. The US Clerk's Office will flatten any document needed prior but all parties MUST flatten documents going forward. Contact the Clerk's Office for any questions. (am) (Entered: 10/06/2020)
10/06/2020	<u>7</u>	Standing Order Regarding Notice of Readiness for Scheduling Conference in Patent Cases (am) (Entered: 10/06/2020)
10/06/2020		Case assigned to Judge Alan D Albright. CM WILL NOW REFLECT THE JUDGE INITIALS AS PART OF THE CASE NUMBER. PLEASE APPEND THESE JUDGE INITIALS TO THE CASE NUMBER ON EACH DOCUMENT THAT YOU FILE IN THIS CASE. (am) (Entered: 10/06/2020)
10/06/2020	<u>8</u>	Summons Issued as to Amazon Web Services, Inc.. (am) (Entered: 10/06/2020)
10/06/2020	<u>9</u>	Summons Issued as to Amazon.Com, Inc.. (am) (Entered: 10/06/2020)
10/06/2020	<u>10</u>	Summons Issued as to Amazon.com Services LLC. (am) (Entered: 10/06/2020)
10/06/2020	<u>11</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill ( <i>on behalf of David Alberti</i> ) ( Filing fee \$ 100 receipt number 0542-14041649) by on behalf of BROADBAND iTV, INC.. (Hill, Jack) (Entered: 10/06/2020)
10/06/2020	<u>12</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill ( <i>on behalf of Jeremiah Armstrong</i> ) ( Filing fee \$ 100 receipt number 0542-14041762) by on behalf of BROADBAND iTV, INC.. (Hill, Jack) (Entered: 10/06/2020)
10/06/2020	<u>13</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill ( <i>on behalf of Marc Belloli</i> ) ( Filing fee \$ 100 receipt number 0542-14041773) by on behalf of BROADBAND iTV, INC.. (Hill, Jack) (Entered: 10/06/2020)
10/06/2020	<u>14</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill ( <i>on behalf of Margaret Day</i> ) ( Filing fee \$ 100 receipt number 0542-14041783) by on behalf of BROADBAND iTV, INC.. (Hill, Jack) (Entered: 10/06/2020)
10/06/2020	<u>15</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill ( <i>on behalf of Hong Lin</i> ) ( Filing fee \$ 100 receipt number 0542-14041798) by on behalf of BROADBAND iTV, INC.. (Hill, Jack) (Entered: 10/06/2020)
10/06/2020	<u>16</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill ( <i>on behalf of Robert Kramer</i> ) ( Filing fee \$ 100 receipt number 0542-14041815) by on behalf of BROADBAND iTV, INC.. (Hill, Jack) (Entered: 10/06/2020)
10/06/2020	<u>17</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill ( <i>on behalf of Sal Lim</i> ) ( Filing fee \$ 100 receipt number 0542-14041836) by on behalf of BROADBAND iTV, INC.. (Hill, Jack) (Entered: 10/06/2020)
10/07/2020		Text Order GRANTING <u>11</u> Motion to Appear Pro Hac Vice for Attorney David Alberti for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this

		entry.) (mm6) (Entered: 10/07/2020)
10/07/2020		Text Order GRANTING <u>12</u> Motion to Appear Pro Hac Vice for Attorney Jeremiah A. Armstrong for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 10/07/2020)
10/07/2020		Text Order GRANTING <u>13</u> Motion to Appear Pro Hac Vice for Attorney Marc Belloli for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 10/07/2020)
10/07/2020		Text Order GRANTING <u>14</u> Motion to Appear Pro Hac Vice for Attorney Margaret Elizabeth Day for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 10/07/2020)
10/07/2020		Text Order GRANTING <u>15</u> Motion to Appear Pro Hac Vice for Attorney Hong Lin for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 10/07/2020)
10/07/2020		Text Order GRANTING <u>16</u> Motion to Appear Pro Hac Vice for Attorney Robert F. Kramer for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 10/07/2020)

10/07/2020		Text Order GRANTING <u>17</u> Motion to Appear Pro Hac Vice for Attorney Sal Lim for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 10/07/2020)
10/09/2020	<u>18</u>	SUMMONS Returned Executed by BROADBAND iTV, INC.. Amazon.com Services LLC served on 10/6/2020, answer due 10/27/2020. (Hill, Jack) (Entered: 10/09/2020)
10/09/2020	<u>19</u>	SUMMONS Returned Executed by BROADBAND iTV, INC.. Amazon.Com, Inc. served on 10/6/2020, answer due 10/27/2020. (Hill, Jack) (Entered: 10/09/2020)
10/09/2020	<u>20</u>	SUMMONS Returned Executed by BROADBAND iTV, INC.. Amazon Web Services, Inc. served on 10/6/2020, answer due 10/27/2020. (Hill, Jack) (Entered: 10/09/2020)
10/21/2020	<u>21</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill <i>on Behalf of Russell S. Tonkovich</i> ( Filing fee \$ 100 receipt number 0542-14094007) by on behalf of BROADBAND iTV, INC.. (Attachments: # <u>1</u> Proposed Order)(Hill, Jack) (Entered: 10/21/2020)
10/23/2020	<u>22</u>	NOTICE of Attorney Appearance by Deron R Dacus on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Attorney Deron R Dacus added to party Amazon Web Services, Inc.(pty:dft), Attorney Deron R Dacus added to party Amazon.Com, Inc.(pty:dft), Attorney Deron R Dacus added to party Amazon.com Services LLC(pty:dft) (Dacus, Deron) (Entered: 10/23/2020)
10/23/2020	<u>23</u>	Agreed MOTION for Extension of Time to File Answer re <u>1</u> Complaint, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Proposed Order)(Dacus, Deron) (Entered: 10/23/2020)
10/26/2020		Text Order GRANTING <u>21</u> Motion to Appear Pro Hac Vice for Attorney Russell S. Tonkovich for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 10/26/2020)
10/26/2020		Text Order GRANTING <u>23</u> Motion for Extension of Time to Answer entered by Judge Alan D Albright. Came on for consideration is Defendants' Motion. Noting that it is an agreed motion, the Court GRANTS the Motion. Defendants shall have up to and including December 11, 2020 to answer or otherwise respond to Plaintiff's Complaint. (This is a text-only entry generated by the court. There is no document associated with this entry.) (hs) (Entered: 10/26/2020)
10/26/2020		Reset Deadlines: Amazon Web Services, Inc. answer due 12/11/2020; Amazon.Com, Inc. answer due 12/11/2020; Amazon.com Services LLC answer due 12/11/2020. (am) (Entered: 10/26/2020)
11/17/2020	<u>24</u>	NOTICE of Attorney Appearance by J. David Hadden on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Attorney J. David Hadden added to party Amazon Web Services, Inc.(pty:dft), Attorney J. David Hadden added to party Amazon.Com, Inc.(pty:dft), Attorney J. David Hadden added to party Amazon.com Services LLC(pty:dft) (Hadden, J.) (Entered: 11/17/2020)



11/17/2020	<u>25</u>	NOTICE of Attorney Appearance by Saina S. Shamilov on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Attorney Saina S. Shamilov added to party Amazon Web Services, Inc.(pty:dft), Attorney Saina S. Shamilov added to party Amazon.Com, Inc.(pty:dft), Attorney Saina S. Shamilov added to party Amazon.com Services LLC(pty:dft) (Shamilov, Saina) (Entered: 11/17/2020)
11/17/2020	<u>26</u>	NOTICE of Attorney Appearance by Ravi Ranganath on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Attorney Ravi Ranganath added to party Amazon Web Services, Inc.(pty:dft), Attorney Ravi Ranganath added to party Amazon.Com, Inc.(pty:dft), Attorney Ravi Ranganath added to party Amazon.com Services LLC(pty:dft) (Ranganath, Ravi) (Entered: 11/17/2020)
12/11/2020	<u>27</u>	ANSWER to <u>1</u> Complaint, with Jury Demand by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC.(Hadden, J.) (Entered: 12/11/2020)
12/14/2020	<u>28</u>	Pro Hac Vice Letter to Todd Gregorian. (lad) (Entered: 12/14/2020)
12/14/2020	<u>29</u>	Pro Hac Vice Letter to Howard Lithaw Lim. (lad) (Entered: 12/14/2020)
12/18/2020	<u>30</u>	NOTICE of Joint Case Readiness Status Report by BROADBAND iTV, INC. (Armstrong, Jeremiah) (Entered: 12/18/2020)
12/31/2020	<u>31</u>	Unopposed MOTION to Withdraw as Attorney by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Proposed Order)(Dacus, Deron) (Entered: 12/31/2020)
01/04/2021	<u>32</u>	NOTICE of Attorney Appearance by Barry K. Shelton on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Attorney Barry K. Shelton added to party Amazon Web Services, Inc.(pty:dft), Attorney Barry K. Shelton added to party Amazon.Com, Inc.(pty:dft), Attorney Barry K. Shelton added to party Amazon.com Services LLC(pty:dft) (Shelton, Barry) (Entered: 01/04/2021)
01/04/2021	<u>33</u>	MOTION to Appear Pro Hac Vice by Barry K. Shelton <i>for Howard L. Lim</i> ( Filing fee \$ 100 receipt number 0542-14337387) by on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Shelton, Barry) (Entered: 01/04/2021)
01/04/2021	<u>34</u>	MOTION to Appear Pro Hac Vice by Barry K. Shelton <i>for Todd Gregorian</i> ( Filing fee \$ 100 receipt number 0542-14337397) by on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Shelton, Barry) (Entered: 01/04/2021)
01/05/2021		Text Order GRANTING <u>31</u> Motion to Withdraw as Attorney. entered by Judge Alan D Albright. Came on for consideration is Defendants Amazon.Com, Inc., Amazon.com Services LLC, and Amazon Web Services, Inc. (Defendants) Motion to Allow Deron R. Dacus (Mr. Dacus) to Withdraw As Counsel. Noting that it is unopposed, the Court GRANTS the motion. It is therefore ORDERED that Mr. Dacus is hereby withdrawn as counsel of record for Defendants. It is further ORDERED that the docket be amended to reflect that Mr. Dacus has withdrawn as counsel for Defendants and that he no longer needs to be noticed of any pleadings, motions, or other documents filed or served in this case. (This is a text-only entry generated by the court. There is no document associated with this entry.) (hs) (Entered: 01/05/2021)
01/06/2021		Text Order GRANTING <u>33</u> Motion to Appear Pro Hac Vice for Attorney Howard Lithaw Lim for Amazon Web Services, Inc., Amazon.Com, Inc., and Amazon.com Services LLC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 01/06/2021)

01/06/2021		Text Order GRANTING <u>34</u> Motion to Appear Pro Hac Vice for Attorney Todd R. Gregorian for Amazon Web Services, Inc., Amazon.Com, Inc., and Amazon.com Services LLC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 01/06/2021)
02/01/2021	<u>35</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill <i>on Behalf of Ryan Dooley</i> ( Filing fee \$ 100 receipt number 0542-14437043) by on behalf of BROADBAND iTV, INC.. (Attachments: # <u>1</u> Proposed Order)(Hill, Jack) (Entered: 02/01/2021)
02/02/2021	<u>36</u>	Proposed Scheduling Order by BROADBAND iTV, INC.. (Fair, Andrea) (Entered: 02/02/2021)
02/02/2021		Text Order GRANTING <u>35</u> Motion to Appear Pro Hac Vice for Attorney Ryan Dooley for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 02/02/2021)
02/04/2021	<u>37</u>	SCHEDULING ORDER: Markman Hearing set for 9/2/2021 09:30 AM before Judge Alan D Albright. Joinder of Parties due by 9/14/2021. Amended Pleadings due by 11/23/2021. Motions due by 6/20/2022. Pretrial Conference set for 8/22/2022 before Judge Alan D Albright. Jury Selection and Jury Trial set for 9/12/2022 before Judge Alan D Albright. Signed by Judge Alan D Albright. (am) (Entered: 02/04/2021)
02/12/2021	<u>38</u>	Standing Order Regarding Filing Documents Under Seal and Redacted Pleadings in Patent Cases. Signed by Judge Alan D Albright. as of 2/12/2021. (bot1) (Entered: 02/24/2021)
06/07/2021	<u>39</u>	MOTION to Appear Pro Hac Vice by Min Wu ( Filing fee \$ 100 receipt number 0542-14884694) by on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Wu, Min) (Entered: 06/07/2021)
06/15/2021		Text Order GRANTING <u>39</u> Motion to Appear Pro Hac Vice. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the above Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if the applicant has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT-I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order. entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (hs) (Entered: 06/15/2021)
06/16/2021	<u>40</u>	Standing Order regarding Scheduling Order. Signed by Judge Alan D Albright. (Entered: 06/17/2021)
06/28/2021	<u>41</u>	Joint MOTION to Extend Scheduling Order Deadlines by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Proposed Order)(Kramer, Robert) (Entered: 06/28/2021)

07/07/2021	<u>42</u>	Sealed Document: Plaintiff's Opening Claim Construction Brief by BROADBAND iTV, INC. (Attachments: # <u>1</u> Affidavit Robert F. Kramer, # <u>2</u> Exhibit 1, # <u>3</u> Exhibit 2, # <u>4</u> Exhibit 3, # <u>5</u> Exhibit 4, # <u>6</u> Exhibit 5, # <u>7</u> Exhibit 6, # <u>8</u> Exhibit 7, # <u>9</u> Exhibit 8, # <u>10</u> Exhibit 9, # <u>11</u> Exhibit 10, # <u>12</u> Exhibit 11, # <u>13</u> Exhibit 12, # <u>14</u> Exhibit 13, # <u>15</u> Exhibit 14, # <u>16</u> Exhibit 15, # <u>17</u> Exhibit 16, # <u>18</u> Exhibit 17, # <u>19</u> Exhibit 18, # <u>20</u> Exhibit 19, # <u>21</u> Exhibit 20, # <u>22</u> Exhibit 21, # <u>23</u> Exhibit 22, # <u>24</u> Exhibit 23) (Kramer, Robert) (Entered: 07/07/2021)
07/07/2021	<u>43</u>	Redacted Copy <i>Plaintiff's Opening Claim Construction Brief</i> of <u>42</u> Sealed Document,, by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Affidavit Robert F. Kramer, # <u>2</u> Exhibit 1, # <u>3</u> Exhibit 2, # <u>4</u> Exhibit 3, # <u>5</u> Exhibit 4, # <u>6</u> Exhibit 5, # <u>7</u> Exhibit 6, # <u>8</u> Exhibit 7, # <u>9</u> Exhibit 8, # <u>10</u> Exhibit 9, # <u>11</u> Exhibit 10, # <u>12</u> Exhibit 11, # <u>13</u> Exhibit 12, # <u>14</u> Exhibit 13 – Filed Under Seal in its Entirety, # <u>15</u> Exhibit 14, # <u>16</u> Exhibit 15, # <u>17</u> Exhibit 16, # <u>18</u> Exhibit 17, # <u>19</u> Exhibit 18, # <u>20</u> Exhibit 19, # <u>21</u> Exhibit 20, # <u>22</u> Exhibit 21, # <u>23</u> Exhibit 22, # <u>24</u> Exhibit 23)(Kramer, Robert) (Entered: 07/07/2021)
07/08/2021	<u>44</u>	Pro Hac Vice Letter to Andrew Hamill. (lad) (Entered: 07/08/2021)
07/08/2021	<u>45</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill <i>on behalf of Andrew Hamill</i> ( Filing fee \$ 100 receipt number 0542–14992367) by on behalf of BROADBAND iTV, INC.. (Attachments: # <u>1</u> Proposed Order)(Hill, Jack) (Entered: 07/08/2021)
07/22/2021		Text Order GRANTING <u>45</u> Motion to Appear Pro Hac Vice for Attorney Andrew Hamill for BROADBAND iTV, INC. Before the Court is the Motion for Admission Pro Hac Vice. The Court, having reviewed the Motion, finds it should be GRANTED and therefore orders as follows: IT IS ORDERED the Motion for Admission Pro Hac Vice is GRANTED. IT IS FURTHER ORDERED that Applicant, if he/she has not already done so, shall immediately tender the amount of \$100.00, made payable to: Clerk, U.S. District Court, in compliance with Local Rule AT–I (f)(2). Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order entered by Judge Alan D Albright. (This is a text–only entry generated by the court. There is no document associated with this entry.) (mm6) (Entered: 07/22/2021)
07/28/2021	<u>46</u>	Reply Claim Construction Brief regarding <u>42</u> Sealed Document,, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Declaration of Howard L. Lim in Support, # <u>2</u> Exhibit 1 to Lim Declaration, # <u>3</u> Exhibit 2 to Lim Declaration, # <u>4</u> Exhibit 3 to Lim Declaration, # <u>5</u> Exhibit 4 to Lim Declaration, # <u>6</u> Exhibit 5 to Lim Declaration, # <u>7</u> Exhibit 6 to Lim Declaration, # <u>8</u> Exhibit 7 to Lim Declaration)(Hadden, J.) (Entered: 07/28/2021)
07/29/2021	<u>47</u>	Joint MOTION for Protective Order by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit A – Protective Order)(Armstrong, Jeremiah) (Entered: 07/29/2021)
07/29/2021	<u>48</u>	NOTICE of Attorney Appearance by Allen Wang on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Attorney Allen Wang added to party Amazon Web Services, Inc.(pty:dft), Attorney Allen Wang added to party Amazon.Com, Inc.(pty:dft), Attorney Allen Wang added to party Amazon.com Services LLC(pty:dft) (Wang, Allen) (Entered: 07/29/2021)
08/02/2021	<u>49</u>	ORDER APPOINTING TECHNICAL ADVISOR. Signed by Judge Alan D Albright. (ir) (Entered: 08/03/2021)
08/05/2021	<u>50</u>	Reply Claim Construction Brief by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Affidavit Robert F. Kramer, # <u>2</u> Exhibit 24)(Kramer, Robert) (Entered: 08/05/2021)
08/12/2021	<u>51</u>	CONFIDENTIALITY AND PROTECTIVE ORDER. Signed by Judge Alan D Albright. (ir) (Entered: 08/13/2021)
08/18/2021	<u>52</u>	AMENDED COMPLAINT <i>for Patent Infringement</i> against Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC amending, filed by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E)(Kramer, Robert) (Entered: 08/18/2021)
08/19/2021	<u>53</u>	Reply Claim Construction Brief regarding <u>50</u> Claim Construction Brief by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: #

		<u>1</u> Declaration of Allen Wang in Support, # <u>2</u> Exhibit 1 to Wang Declaration, # <u>3</u> Exhibit 2 to Wang Declaration, # <u>4</u> Exhibit 3 to Wang Declaration)(Hadden, J.) (Entered: 08/19/2021)
08/23/2021	<u>54</u>	NOTICE of Filing Joint Claim Construction Statement by BROADBAND iTV, INC. (Kramer, Robert) (Entered: 08/23/2021)
08/26/2021	<u>55</u>	ORDER CANCELLING Markman Hearing. Signed by Judge Alan D Albright. (bot1) (Entered: 08/26/2021)
09/01/2021	<u>56</u>	ANSWER to <u>52</u> Amended Complaint, with Jury Demand by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC.(Hadden, J.) (Entered: 09/01/2021)
09/22/2021	<u>57</u>	NOTICE <i>Concerning Agreement to Extend Deadlines (Joint)</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Shelton, Barry) (Entered: 09/22/2021)
10/08/2021	<u>58</u>	Standing Order Regarding Order Governing Proceedings Patent Cases. Signed by Judge Alan D Albright. (Entered: 10/13/2021)
10/14/2021	<u>59</u>	ORDER, (Markman Hearing set for 10/30/2021 10:00 AM before Judge Alan D Albright). Signed by Judge Alan D Albright. (bot1) (Entered: 10/14/2021)
10/26/2021	<u>60</u>	ORDER Cancelling Markman Hearing. Signed by Judge Alan D Albright. (tada) (Entered: 10/26/2021)
10/31/2021	<u>61</u>	ORDER TO PAY TECHNICAL ADVISOR. Signed by Judge Alan D Albright. (lad) (Entered: 11/01/2021)
10/31/2021	<u>62</u>	CLAIM CONSTRUCTION ORDER. Signed by Judge Alan D Albright. (lad) (Entered: 11/01/2021)
11/22/2021	<u>63</u>	Opposed MOTION for Extension of Time to File <i>Service of Final Invalidity Contentions</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Wu Decl ISO Defs' Motion, # <u>2</u> Proposed Order Granting Motion)(Gregorian, Todd) (Entered: 11/22/2021)
11/23/2021	<u>64</u>	<b>DEFICIENCY NOTICE:</b> re <u>63</u> Opposed MOTION for Extension of Time to File <i>Service of Final Invalidity Contentions</i> . Pursuant to the Standing Order Governing Proceedings Dated 10/8/2021. The proposed Order shall omit the word Proposed from the title. (ir) (Entered: 11/23/2021)
11/23/2021	<u>65</u>	ATTACHMENT to <u>63</u> Opposed MOTION for Extension of Time to File <i>Service of Final Invalidity Contentions</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Gregorian, Todd) (Entered: 11/23/2021)
11/23/2021	<u>66</u>	Response in Opposition to Motion, filed by BROADBAND iTV, INC., re <u>63</u> Opposed MOTION for Extension of Time to File <i>Service of Final Invalidity Contentions</i> filed by Defendant Amazon.com Services LLC, Defendant Amazon.Com, Inc., Defendant Amazon Web Services, Inc. (Attachments: # <u>1</u> Affidavit Robert F. Kramer, # <u>2</u> Exhibit 1)(Kramer, Robert) (Entered: 11/23/2021)
11/29/2021		Text Order GRANTING IN PART <u>63</u> Motion for Extension of Time to File entered by Judge Alan D Albright. Defendants shall have until and through December 14, 2021 to serve their final invalidity contentions. ( This is a text-only entry generated by the court. There is no document associated with this entry.) (JZ) (Entered: 11/29/2021)
01/12/2022	<u>67</u>	NOTICE of Attorney Appearance by J. Mark Mann on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Attorney J. Mark Mann added to party Amazon Web Services, Inc.(pty:dft), Attorney J. Mark Mann added to party Amazon.Com, Inc.(pty:dft), Attorney J. Mark Mann added to party Amazon.com Services LLC(pty:dft) (Mann, J.) (Entered: 01/12/2022)
01/12/2022	<u>68</u>	NOTICE of Attorney Appearance by G. Blake Thompson on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Attorney G. Blake Thompson added to party Amazon Web Services, Inc.(pty:dft), Attorney G. Blake Thompson added to party Amazon.Com, Inc.(pty:dft), Attorney G. Blake Thompson added to party Amazon.com Services LLC(pty:dft) (Thompson, G.) (Entered: 01/12/2022)

		01/12/2022)
01/14/2022	<u>69</u>	MOTION to Appear Pro Hac Vice by J. David Hadden <i>on Behalf of Geoffrey R. Miller</i> ( Filing fee \$ 100 receipt number 0542–15619297) by on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Proposed Order)(Hadden, J.) (Entered: 01/14/2022)
01/19/2022	<u>70</u>	ORDER GRANTING <u>69</u> Motion to Appear Pro Hac Vice for Attorney Geoffrey R. Miller. Attorney added for Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order, <b>if he/she has not previously done so for a prior case in this District</b> . Signed by Judge Alan D Albright. (sjda) (Main Document 70 replaced on 1/25/2022) (sv). (Entered: 01/19/2022)
01/21/2022	<u>71</u>	Unopposed MOTION to Withdraw as Attorney <i>Barry K. Shelton</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Proposed Order)(Shelton, Barry) (Entered: 01/21/2022)
01/24/2022	<u>72</u>	Unopposed MOTION <i>OF AMAZON.COM, INC., AMAZON.COM SERVICES LLC AND AMAZON WEB SERVICES, INC. FOR LEAVE TO SERVE AMENDED FINAL INVALIDITY CONTENTIONS</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Proposed Order)(Wang, Allen) (Entered: 01/24/2022)
01/26/2022	<u>73</u>	MOTION to Appear Pro Hac Vice by J. David Hadden <i>on Behalf of Daniel S. Rabinowitz</i> ( Filing fee \$ 100 receipt number 0542–15650471) by on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Proposed Order)(Hadden, J.) (Entered: 01/26/2022)
01/28/2022	<u>74</u>	ORDER GRANTING <u>73</u> Motion to Appear Pro Hac Vice for Attorney Daniel S. Rabinowitz. Attorney added for Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order, <b>if he/she has not previously done so for a prior case in this District</b> . Signed by Judge Alan D Albright. (sjda) (Entered: 01/28/2022)
01/31/2022	<u>75</u>	NOTICE <i>of Firm Name Change</i> by BROADBAND iTV, INC. (Kramer, Robert) (Entered: 01/31/2022)
03/09/2022	<u>76</u>	STIPULATION [JOINT] <i>STIPULATION REGARDING DEPOSITION TESTIMONY OF MARK BEARIAULT AND TIM EVARD</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Wang, Allen) (Entered: 03/09/2022)
03/10/2022		Parties shall comply with Judge Albright's updated <u>standing orders</u> and <u>COVID–19 standing order</u> available by clicking the included hyperlinks.  The updated orders are as follows: 1. <u>Standing Order Regarding Notice of Readiness for Patent Cases 030722</u> , 2. <u>Standing Order on Pretrial Procedures and Requirements in Civil Cases 030722</u> , 3. <u>Standing Order Governing Proceedings 4.0 – Patent Cases 030722</u> , 4. <u>Amended Standing Order Regarding Coronavirus (COVID–19) and Court Proceedings</u> , 5. <u>Amended Standing Order Regarding Joint Or Unopposed Request To Change Deadlines 030722</u> , 6. <u>Amended Standing Order Regarding Filing Documents Under Seal and Redacted Public Versions 030722</u> . (jkda) (Entered: 03/10/2022)
03/21/2022	<u>77</u>	STIPULATION [JOINT] <i>STIPULATION REGARDING PRESENTATION OF EXPERT TESTIMONY</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Wang, Allen) (Entered: 03/21/2022)
03/25/2022	<u>78</u>	MOTION to Appear Pro Hac Vice by Allen Wang <i>on Behalf of Gregory M. Sefian</i> ( Filing fee \$ 100 receipt number 0542–15855692) by on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u>

		Proposed Order)(Wang, Allen) (Entered: 03/25/2022)
03/29/2022	<u>79</u>	ORDER GRANTING <u>78</u> Motion to Appear Pro Hac Vice for Attorney Gregory Michael Sefian. Attorney added for Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order, <b>if he/she has not previously done so for a prior case in this District</b> . Signed by Judge Alan D Albright. (bot1) (Entered: 03/29/2022)
04/07/2022	<u>80</u>	NOTICE <i>Joint Notice of Agreed Extensions for Opening Expert Reports and Rebuttal Expert Reports</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Thompson, G.) (Entered: 04/07/2022)
04/11/2022		Text Order GRANTING <u>71</u> Motion to Withdraw as Attorney. It is therefore ORDERED that Barry K. Shelton is permitted to withdraw as counsel of record for Defendant in this case. ECF notifications to Barry K. Shelton are to be terminated in this case. Entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (PTlc) (Entered: 04/11/2022)
04/11/2022		Text Order GRANTING <u>72</u> Motion because it is unopposed. It is therefore ORDERED that Defendants Motion is GRANTED. Defendants may serve supplemental exhibits to the Final Invalidity Contentions based on documents produced on January 6, 2022. Entered by Judge Alan D Albright. (This is a text-only entry generated by the court. There is no document associated with this entry.) (PTlc) (Entered: 04/11/2022)
04/11/2022		Text Order MOOTING <u>41</u> Motion to Extend Scheduling Order Deadlines entered by Judge Alan D Albright. All changes to dates are either moot or treated as a stipulation between the parties regarding deadlines that do not affect a Court date. (This is a text-only entry generated by the court. There is no document associated with this entry.) (PTlc) (Entered: 04/11/2022)
04/14/2022	<u>81</u>	Standing Order Regarding Order Governing Proceedings Patent Cases. Signed by Judge Alan D Albright. (Entered: 04/14/2022)
04/14/2022	<u>82</u>	STIPULATION [JOINT] REGARDING DEPOSITION TESTIMONY OF ARTHUR MONK AND RICHARD TILLOTSON by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Wang, Allen) (Entered: 04/14/2022)
04/14/2022	<u>83</u>	Sealed Document: Joint Stipulation Regarding CDNs and A9 by BROADBAND iTV, INC. (Armstrong, Jeremiah) (Entered: 04/14/2022)
04/20/2022	<u>84</u>	Redacted Copy <i>Joint Stipulation Regarding CDNs and A9</i> of <u>83</u> Sealed Document by BROADBAND iTV, INC.. (Armstrong, Jeremiah) (Entered: 04/20/2022)
04/26/2022	<u>85</u>	Opposed Sealed Motion Opposed Motion for Leave to Supplement Invalidity Contentions by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Affidavit Declaration of Allen Wang ISO of Opposed Motion for Leave to Supplement Invalidity Contentions, # <u>2</u> Exhibit 5 (Filed Under Seal), # <u>3</u> Exhibit 6 (Filed Under Seal), # <u>4</u> Exhibit 7 (Filed Under Seal), # <u>5</u> Exhibit 8 (Filed Under Seal), # <u>6</u> Exhibit 9 (Filed Under Seal), # <u>7</u> Exhibit 10 (Filed Under Seal), # <u>8</u> Exhibit 11 (Filed Under Seal), # <u>9</u> Exhibit 13 (Filed Under Seal), # <u>10</u> Exhibit 15 (Filed Under Seal), # <u>11</u> Exhibit 16 (Filed Under Seal), # <u>12</u> Exhibit 18 (Filed Under Seal), # <u>13</u> Exhibit 26 (Filed Under Seal), # <u>14</u> Proposed Order Granting Defendants Opposed Motion for Leave to Supplement Invalidity Contentions) (Shamilov, Saina) (Entered: 04/26/2022)
04/26/2022	<u>86</u>	ATTACHMENT <i>Exhibits 1–4, 12, 14, 20–25 To the Declaration of Allen Wang ISO</i> to <u>85</u> Opposed Sealed Motion Opposed Motion for Leave to Supplement Invalidity Contentions by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4, # <u>5</u> Exhibit 12, # <u>6</u> Exhibit 14, # <u>7</u> Exhibit 20, # <u>8</u> Exhibit 21, # <u>9</u> Exhibit 22, # <u>10</u> Exhibit 23, # <u>11</u> Exhibit 24, # <u>12</u> Exhibit 25)(Shamilov, Saina) (Entered: 04/26/2022)
04/26/2022	<u>87</u>	CERTIFICATE OF SERVICE by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC <u>85</u> Opposed Sealed Motion Opposed Motion for Leave to

		Supplement Invalidity Contentions by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Shamilov, Saina) (Entered: 04/26/2022)
05/02/2022	<u>88</u>	Sealed Document: Plaintiff's Opposition to Defendants' Motion for Leave to Supplement Invalidity Contentions of <u>85</u> Opposed Sealed Motion Opposed Motion for Leave to Supplement Invalidity Contentions by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by BROADBAND iTV, INC. (Attachments: # <u>1</u> Affidavit Jeremiah A. Armstrong, # <u>2</u> Exhibit A, # <u>3</u> Exhibit B, # <u>4</u> Exhibit C, # <u>5</u> Exhibit D, # <u>6</u> Exhibit E, # <u>7</u> Exhibit H, # <u>8</u> Exhibit I, # <u>9</u> Exhibit J, # <u>10</u> Exhibit K, # <u>11</u> Exhibit L) (Armstrong, Jeremiah) (Entered: 05/02/2022)
05/02/2022	<u>89</u>	ATTACHMENT <i>Declaration of Milton Diaz Perez and Exhibits F and G to the Declaration of Jeremiah A. Armstrong in Support of Plaintiff's Opposition to Defendants' Motion for Leave to Supplement Invalidity Contentions to <u>88</u> Sealed Document</i> , by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit F, # <u>2</u> Exhibit G)(Armstrong, Jeremiah) (Entered: 05/02/2022)
05/03/2022	<u>90</u>	Pro Hac Vice Letter to Sven Raz. (lad) (Entered: 05/03/2022)
05/03/2022	<u>91</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill <i>on behalf of S. Raz</i> ( Filing fee \$ 100 receipt number 0542-15990268) by on behalf of BROADBAND iTV, INC.. (Hill, Jack) (Entered: 05/03/2022)
05/03/2022	<u>92</u>	Redacted Public Version of <u>85</u> Opposed Sealed Motion Opposed Motion for Leave to Supplement Invalidity Contentions by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Shamilov, Saina) (Entered: 05/03/2022)
05/04/2022	<u>93</u>	ORDER GRANTING <u>91</u> Motion to Appear Pro Hac Vice for Attorney Sven Raz. Attorney added for BROADBAND iTV, INC. Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order, <b>if he/she has not previously done so for a prior case in this District</b> . Signed by Judge Alan D Albright. (bot2) (Entered: 05/04/2022)
05/09/2022	<u>94</u>	Redacted Public Version of <i>Opposition to Motion for Leave to Supplement Invalidity Contentions of <u>88</u> Sealed Document</i> , by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Affidavit Jeremiah A. Armstrong)(Armstrong, Jeremiah) (Entered: 05/09/2022)
05/09/2022	<u>95</u>	Sealed Document: Reply in Support of Motion for Leave to Supplement Invalidity Contentions by Amazon.com, Inc., Amazon.com Services LLC, and Amazon Web Services, Inc. of <u>85</u> Opposed Sealed Motion Opposed Motion for Leave to Supplement Invalidity Contentions by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Affidavit Reply Declaration of Allen Wang ISO Motion for Leave to Supplement Invalidity Contentions, # <u>2</u> Exhibit 27 (Filed Under Seal), # <u>3</u> Exhibit 28 (Filed Under Seal), # <u>4</u> Exhibit 30 (Filed Under Seal)) (Shamilov, Saina) (Entered: 05/09/2022)
05/09/2022	<u>96</u>	ATTACHMENT <i>Exhibit 29 to Reply Declaration of Allen Wang in Support of Motion for Leave to Supplement Invalidity Contentions to <u>95</u> Sealed Document</i> , by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit 29)(Shamilov, Saina) (Entered: 05/09/2022)
05/09/2022	<u>97</u>	CERTIFICATE OF SERVICE by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC <u>95</u> Sealed Document,, (Shamilov, Saina) (Entered: 05/09/2022)
05/11/2022	<u>98</u>	Redacted Public Version <i>Reply ISO Motion for Leave to Supplement Invalidity Contentions of <u>95</u> Sealed Document</i> , by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Shamilov, Saina) (Entered: 05/11/2022)
05/26/2022	<u>99</u>	NOTICE of Attorney Appearance by Eric B. Young on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Attorney Eric B. Young added to party Amazon Web Services, Inc.(pty:dft), Attorney Eric B. Young added to party Amazon.Com, Inc.(pty:dft), Attorney Eric B. Young added to party Amazon.com Services LLC(pty:dft) (Young, Eric) (Entered: 05/26/2022)

06/03/2022	<u>100</u>	NOTICE <i>[Joint Notice of Agreed Extension]</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Miller, Geoffrey) (Entered: 06/03/2022)
06/16/2022	<u>101</u>	NOTICE <i>Joint Notice of Agreed Extension</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Miller, Geoffrey) (Entered: 06/16/2022)
06/16/2022	<u>102</u>	STATUS REPORT <i>Joint Report Regarding Case Narrowing</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit A)(Rabinowitz, Daniel) (Entered: 06/16/2022)
06/21/2022	<u>103</u>	Sealed Motion to Exclude Testimony of Defendants' Damages Expert and to Strike Portions of Defendants' Damages Expert Report by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit B) (Day, Margaret) (Entered: 06/21/2022)
06/21/2022	<u>104</u>	MOTION to Appear Pro Hac Vice by Jack Wesley Hill <i>on behalf of R. Xie</i> ( Filing fee \$ 100 receipt number 0542-16164918) by on behalf of BROADBAND iTV, INC.. (Hill, Jack) (Entered: 06/21/2022)
06/21/2022	<u>105</u>	ATTACHMENT <i>Declaration of M. Elizabeth Day</i> to <u>103</u> Sealed Motion to Exclude Testimony of Defendants' Damages Expert and to Strike Portions of Defendants' Damages Expert Report by BROADBAND iTV, INC. by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Proposed Order)(Day, Margaret) (Entered: 06/21/2022)
06/21/2022	<u>106</u>	Sealed Motion to Exclude and Strike Improper Expert Opinions Regarding the Meaning of Claim Terms by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 7) (Kramer, Robert) (Entered: 06/21/2022)
06/21/2022	<u>107</u>	ATTACHMENT <i>Declaration of Robert F. Kramer</i> to <u>106</u> Sealed Motion to Exclude and Strike Improper Expert Opinions Regarding the Meaning of Claim Terms by BROADBAND iTV, INC. by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit 2, # <u>2</u> Exhibit 3, # <u>3</u> Exhibit 4, # <u>4</u> Exhibit 5, # <u>5</u> Exhibit 6, # <u>6</u> Exhibit 8, # <u>7</u> Exhibit 9, # <u>8</u> Proposed Order)(Kramer, Robert) (Entered: 06/21/2022)
06/21/2022	<u>108</u>	Sealed Motion for Summary Judgment Regarding Amazon's Derivation Invalidity Defense by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit D, # <u>4</u> Exhibit I, # <u>5</u> Exhibit J, # <u>6</u> Exhibit K, # <u>7</u> Exhibit L, # <u>8</u> Exhibit M, # <u>9</u> Exhibit N, # <u>10</u> Exhibit O) (Kramer, Robert) (Entered: 06/21/2022)
06/21/2022	<u>109</u>	ATTACHMENT <i>Declaration of David L. Alberti</i> to <u>108</u> Sealed Motion for Summary Judgment Regarding Amazon's Derivation Invalidity Defense by BROADBAND iTV, INC. by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit C, # <u>2</u> Exhibit E, # <u>3</u> Exhibit F, # <u>4</u> Exhibit G, # <u>5</u> Exhibit H, # <u>6</u> Affidavit Milton Diaz Perez, # <u>7</u> Proposed Order)(Kramer, Robert) (Entered: 06/21/2022)
06/21/2022	<u>110</u>	Sealed Motion for Summary Judgment of Invalidity Under Section 112 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Gregorian, Todd) (Entered: 06/21/2022)
06/21/2022	<u>111</u>	Sealed Motion DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY UNDER 35 U.S.C. § 101 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Affidavit of Min Wu, # <u>2</u> Exhibit 8, # <u>3</u> Exhibit 9, # <u>4</u> Exhibit 11, # <u>5</u> Exhibit 12, # <u>6</u> Exhibit 13) (Hadden, J.) (Entered: 06/21/2022)
06/21/2022	<u>112</u>	AFFIDAVIT in Support of <u>110</u> Sealed Motion for Summary Judgment of Invalidity Under Section 112 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC <i>Declaration of Todd R. Gregorian in Support of Defendants' Motion for Summary Judgment of Invalidity Under Section 112</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit 2, # <u>2</u> Exhibit 4, # <u>3</u> Exhibit 6, # <u>4</u> Exhibit 7, # <u>5</u> Exhibit 8, # <u>6</u> Exhibit 9)(Gregorian, Todd) (Entered: 06/21/2022)
06/21/2022	<u>113</u>	ATTACHMENT <i>EXHIBITS 1-7 AND 10 TO THE DECLARATION OF MIN WU</i> to <u>111</u> Sealed Motion DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY UNDER 35 U.S.C. § 101 by Amazon Web Services, Inc.,



		Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4, # <u>5</u> Exhibit 5, # <u>6</u> Exhibit 6, # <u>7</u> Exhibit 7, # <u>8</u> Exhibit 10)(Wu, Min) (Entered: 06/21/2022)
06/21/2022	<u>114</u>	Sealed Document: Sealed Exhibits 1, 3, 5, and 10 to the Declaration of Todd R. Gregorian in Support of Defendants' Motion for Summary Judgment of Invalidity Under Section 112 of <u>110</u> Sealed Motion for Summary Judgment of Invalidity Under Section 112 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Exhibit 1 to Gregorian Declaration, # <u>2</u> Exhibit 3 to Gregorian Declaration, # <u>3</u> Exhibit 5 to Gregorian Declaration, # <u>4</u> Exhibit 10 to Gregorian Declaration) (Gregorian, Todd) (Entered: 06/21/2022)
06/21/2022	<u>115</u>	Sealed Motion Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Affidavit Declaration of Geoffrey R. Miller ISO of Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein (Filed Under Seal), # <u>2</u> Exhibit 6 (Filed Under Seal), # <u>3</u> Exhibit 7 (Filed Under Seal), # <u>4</u> Exhibit 8 (Filed Under Seal), # <u>5</u> Exhibit 9 (Filed Under Seal), # <u>6</u> Exhibit 10 (Filed Under Seal), # <u>7</u> Exhibit 11 (Filed Under Seal), # <u>8</u> Exhibit 12 (Filed Under Seal), # <u>9</u> Exhibit 13 (Filed Under Seal), # <u>10</u> Exhibit 14 (Filed Under Seal), # <u>11</u> Exhibit 15 (Filed Under Seal), # <u>12</u> Exhibit 17 (Filed Under Seal), # <u>13</u> Exhibit 19 (Filed Under Seal), # <u>14</u> Exhibit 20 (Filed Under Seal), # <u>15</u> Proposed Order) (Miller, Geoffrey) (Entered: 06/21/2022)
06/21/2022	<u>116</u>	ATTACHMENT Exhibits 1–5; 16, 18 and 21 to the Declaration of Geoffrey R. Miller ISO Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein to <u>115</u> Sealed Motion Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4, # <u>5</u> Exhibit 5, # <u>6</u> Exhibit 16, # <u>7</u> Exhibit 18, # <u>8</u> Exhibit 21)(Miller, Geoffrey) (Entered: 06/21/2022)
06/21/2022	<u>117</u>	Sealed Motion for Summary Judgment of NonInfringement by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Shamilov, Saina) (Entered: 06/21/2022)
06/21/2022	<u>118</u>	AFFIDAVIT in Support of <u>117</u> Sealed Motion for Summary Judgment of NonInfringement by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC Declaration of Saina S. Shamilov in Support of Defendants' Motion for Summary Judgment of NonInfringement by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4, # <u>5</u> Exhibit 5, # <u>6</u> Exhibit 6, # <u>7</u> Exhibit 7, # <u>8</u> Exhibit 8, # <u>9</u> Exhibit 9, # <u>10</u> Exhibit 14, # <u>11</u> Exhibit 15, # <u>12</u> Exhibit 25, # <u>13</u> Exhibit 26)(Shamilov, Saina) (Entered: 06/21/2022)
06/21/2022	<u>119</u>	Sealed Document: Sealed Exhibits 10–13, 16–24, and 27–29 to the Declaration of Saina S. Shamilov in Support of Defendants' Motion for Summary Judgment of NonInfringement of <u>117</u> Sealed Motion for Summary Judgment of NonInfringement by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Exhibit 10 to Shamilov Declaration, # <u>2</u> Exhibit 11 to Shamilov Declaration, # <u>3</u> Exhibit 12 to Shamilov Declaration, # <u>4</u> Exhibit 13 to Shamilov Declaration, # <u>5</u> Exhibit 16 to Shamilov Declaration, # <u>6</u> Exhibit 17 to Shamilov Declaration, # <u>7</u> Exhibit 18 to Shamilov Declaration, # <u>8</u> Exhibit 19 to Shamilov Declaration, # <u>9</u> Exhibit 20 to Shamilov Declaration, # <u>10</u> Exhibit 21 to Shamilov Declaration, # <u>11</u> Exhibit 22 to Shamilov Declaration, # <u>12</u> Exhibit 23 to Shamilov Declaration, # <u>13</u> Exhibit 24 to Shamilov Declaration, # <u>14</u> Exhibit 27 to Shamilov Declaration, # <u>15</u> Exhibit 28 to Shamilov Declaration, # <u>16</u> Exhibit 29 to Shamilov Declaration) (Shamilov, Saina) (Entered: 06/21/2022)
06/23/2022	<u>120</u>	Disc received in Clerk's Office with AV file Exhibit 17 to Document <u>119</u> (119–6). Kept in Clerk's Office secure storage for Court's use.(lad) (Entered: 06/23/2022)
06/24/2022	<u>121</u>	Redacted Copy of <u>103</u> Sealed Motion to Exclude Testimony of Defendants' Damages Expert and to Strike Portions of Defendants' Damages Expert Report by BROADBAND iTV, INC. by BROADBAND iTV, INC.. (Day, Margaret) (Entered: 06/24/2022)

		06/24/2022)
06/24/2022	<u>122</u>	Redacted Copy of <u>106</u> Sealed Motion to Exclude and Strike Improper Expert Opinions Regarding the Meaning of Claim Terms by BROADBAND iTV, INC. by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 06/24/2022)
06/24/2022	<u>123</u>	Redacted Copy of <u>108</u> Sealed Motion for Summary Judgment Regarding Amazon's Derivation Invalidity Defense by BROADBAND iTV, INC. by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 06/24/2022)
06/28/2022	<u>124</u>	ORDER GRANTING <u>104</u> Motion to Appear Pro Hac Vice for Attorney Robert Y. Xie for BROADBAND iTV, INC.. Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order. Signed by Judge Alan D Albright. (lad) (Entered: 06/28/2022)
06/28/2022	<u>125</u>	Redacted Copy of <u>110</u> Sealed Motion for Summary Judgment of Invalidity Under Section 112 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Gregorian, Todd) (Entered: 06/28/2022)
06/28/2022	<u>126</u>	Redacted Copy of <u>111</u> Sealed Motion DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY UNDER 35 U.S.C. § 101 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Hadden, J.) (Entered: 06/28/2022)
06/28/2022	<u>127</u>	Redacted Copy of <u>115</u> Sealed Motion Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Miller, Geoffrey) (Entered: 06/28/2022)
06/28/2022	<u>128</u>	Redacted Copy of <u>117</u> Sealed Motion for Summary Judgment of NonInfringement by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Shamilov, Saina) (Entered: 06/28/2022)
07/06/2022	<u>129</u>	Sealed Document: Plaintiff's Opposition to Defendants' Motion for Summary Judgment of Noninfringement of <u>117</u> Sealed Motion for Summary Judgment of NonInfringement by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit H, # <u>5</u> Exhibit I, # <u>6</u> Exhibit J, # <u>7</u> Exhibit K, # <u>8</u> Exhibit L, # <u>9</u> Exhibit M, # <u>10</u> Exhibit N, # <u>11</u> Exhibit O, # <u>12</u> Exhibit P, # <u>13</u> Exhibit Q, # <u>14</u> Exhibit R, # <u>15</u> Exhibit S, # <u>16</u> Exhibit T, # <u>17</u> Exhibit U, # <u>18</u> Exhibit V, # <u>19</u> Exhibit W) (Kramer, Robert) (Entered: 07/06/2022)
07/06/2022	<u>130</u>	ATTACHMENT Declaration of Robert F. Kramer in Support of Plaintiff's Opposition to Motion for Summary Judgment of NonInfringement to <u>129</u> Sealed Document., by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit D, # <u>2</u> Exhibit E, # <u>3</u> Exhibit F, # <u>4</u> Exhibit G)(Kramer, Robert) (Entered: 07/06/2022)
07/06/2022	<u>131</u>	Sealed Document: Plaintiff's Opposition to Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein of <u>115</u> Sealed Motion Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D) (Kramer, Robert) (Entered: 07/06/2022)
07/06/2022	<u>132</u>	ATTACHMENT Declaration of Robert F. Kramer in Support of Plaintiff's Opposition to Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein to <u>131</u> Sealed Document, <u>115</u> Sealed Motion Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit E, # <u>2</u> Exhibit F)(Kramer, Robert) (Entered: 07/06/2022)
07/06/2022	<u>133</u>	Response in Opposition to Motion, filed by BROADBAND iTV, INC., re <u>111</u> Sealed Motion DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY UNDER 35 U.S.C. § 101 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC filed by Defendant Amazon.com

		Services LLC, Defendant Amazon.Com, Inc., Defendant Amazon Web Services, Inc. (Attachments: # <u>1</u> Affidavit Robert F. Kramer, # <u>2</u> Exhibit A, # <u>3</u> Exhibit B, # <u>4</u> Exhibit C, # <u>5</u> Exhibit D, # <u>6</u> Exhibit E, # <u>7</u> Exhibit F, # <u>8</u> Exhibit G, # <u>9</u> Exhibit H, # <u>10</u> Exhibit I)(Kramer, Robert) (Entered: 07/06/2022)
07/06/2022	<u>134</u>	Sealed Document: Plaintiff's Opposition to Defendants' Motion for Summary Judgment of Invalidity Under Section 112 of <u>110</u> Sealed Motion for Summary Judgment of Invalidity Under Section 112 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit C, # <u>3</u> Exhibit F, # <u>4</u> Exhibit H) (Kramer, Robert) (Entered: 07/06/2022)
07/06/2022	<u>135</u>	ATTACHMENT Declaration of Robert F. Kramer in Support of Plaintiff's Opposition to Defendants' Motion for Summary Judgment of Invalidity Under Section 112 to <u>134</u> Sealed Document, by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit B, # <u>2</u> Exhibit D, # <u>3</u> Exhibit E, # <u>4</u> Exhibit G, # <u>5</u> Exhibit I)(Kramer, Robert) (Entered: 07/06/2022)
07/06/2022	<u>136</u>	Sealed Document: <i>Opposition to Plaintiff's Motion to Exclude Testimony of Amazon's Damages Expert Lauren Kindler</i> of <u>103</u> Sealed Motion to Exclude Testimony of Defendants' Damages Expert and to Strike Portions of Defendants' Damages Expert Report by BROADBAND iTV, INC. by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Declaration of Geoffrey R. Miller in Support of Opposition to Exclude Testimony of Amazon's Damages Expert Lauren Kindler, # <u>2</u> Exhibit 1 (Filed Under Seal), # <u>3</u> Exhibit 2 (Filed Under Seal), # <u>4</u> Exhibit 3 (Filed Under Seal), # <u>5</u> Exhibit 4 (Filed Under Seal)) (Miller, Geoffrey) (Entered: 07/06/2022)
07/06/2022	<u>137</u>	Sealed Document: DEFENDANTS' OPPOSITION TO PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT REGARDING DERIVATION of <u>108</u> Sealed Motion for Summary Judgment Regarding Amazon's Derivation Invalidity Defense by BROADBAND iTV, INC. by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Affidavit of Min Wu, # <u>2</u> Exhibit 1, # <u>3</u> Exhibit 2, # <u>4</u> Exhibit 3, # <u>5</u> Exhibit 4, # <u>6</u> Exhibit 5, # <u>7</u> Exhibit 6, # <u>8</u> Exhibit 7, # <u>9</u> Exhibit 8, # <u>10</u> Exhibit 9, # <u>11</u> Exhibit 10, # <u>12</u> Exhibit 11, # <u>13</u> Exhibit 12, # <u>14</u> Exhibit 13, # <u>15</u> Exhibit 14, # <u>16</u> Exhibit 15) (Hadden, J.) (Entered: 07/06/2022)
07/06/2022	<u>138</u>	Sealed Document: Opposition to Plaintiff's Motion to Exclude Expert Opinions Regarding Noninfringement and Invalidity of <u>106</u> Sealed Motion to Exclude and Strike Improper Expert Opinions Regarding the Meaning of Claim Terms by BROADBAND iTV, INC. by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Exhibit 2 to Wang Decl ISO Opposition (Filed Under Seal)) (Wang, Allen) (Entered: 07/06/2022)
07/06/2022	<u>139</u>	ATTACHMENT Declaration of Allen Wang in Support of Opposition to Plaintiff's Motion to Exclude Expert Opinions Regarding Noninfringement and Invalidity to <u>138</u> Sealed Document, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2)(Wang, Allen) (Entered: 07/06/2022)
07/07/2022	<u>140</u>	Sealed Document filed (sv) (Entered: 07/08/2022)
07/12/2022	<u>141</u>	Redacted Copy <i>Opposition to Plaintiff's Motion to Exclude Testimony of Amazon's Damages Expert Lauren Kindler</i> of <u>136</u> Sealed Document,, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Miller, Geoffrey) (Entered: 07/12/2022)
07/12/2022	<u>142</u>	Redacted Copy <i>Defendants' Opposition to Plaintiff's Motion for Summary Judgment Regarding Derivation</i> of <u>137</u> Sealed Document,, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Hadden, J.) (Entered: 07/12/2022)
07/12/2022	<u>143</u>	Redacted Copy <i>Opposition to Plaintiff's Motion to Exclude Expert Opinions Regarding Noninfringement and Invalidity</i> of <u>138</u> Sealed Document, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Wang, Allen) (Entered: 07/12/2022)

07/12/2022	<u>144</u>	Redacted Copy of <i>Plaintiff's Opposition to Defendants' Motion for Summary Judgment of NonInfringement</i> of <u>129</u> Sealed Document,, by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 07/12/2022)
07/12/2022	<u>145</u>	Redacted Copy of <i>Plaintiff's Opposition to Defendants' Daubert Motion to Exclude Expert Testimony of Roy Weinstein</i> of <u>131</u> Sealed Document, by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 07/12/2022)
07/12/2022	<u>146</u>	Redacted Copy of <i>Plaintiff's Opposition to Defendants' Motion for Summary Judgment of Invalidity Under Section 112</i> of <u>134</u> Sealed Document, by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 07/12/2022)
07/13/2022	<u>147</u>	Sealed Document: Plaintiff's Reply in support of Motion to Exclude Testimony of Defendants' Damages Expert and to Strike Portions of Defendants' Damages Expert Report of <u>103</u> Sealed Motion to Exclude Testimony of Defendants' Damages Expert and to Strike Portions of Defendants' Damages Expert Report by BROADBAND iTV, INC. by BROADBAND iTV, INC. (Day, Margaret) (Entered: 07/13/2022)
07/13/2022	<u>148</u>	Sealed Document: Plaintiff's Reply in support of Motion to Exclude and Strike Improper Expert Opinions Regarding the Meaning of Claim Terms of <u>106</u> Sealed Motion to Exclude and Strike Improper Expert Opinions Regarding the Meaning of Claim Terms by BROADBAND iTV, INC. by BROADBAND iTV, INC. (Kramer, Robert) (Entered: 07/13/2022)
07/13/2022	<u>149</u>	Sealed Document: Plaintiff's Reply in support of its Motion for Summary Judgment Regarding Amazon's Derivation Invalidity Defense of <u>108</u> Sealed Motion for Summary Judgment Regarding Amazon's Derivation Invalidity Defense by BROADBAND iTV, INC. by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit P, # <u>2</u> Exhibit Q, # <u>3</u> Exhibit R) (Kramer, Robert) (Entered: 07/13/2022)
07/13/2022	<u>150</u>	ATTACHMENT <i>Declaration of David L. Alberti to Plaintiff's Reply in Support its Motion for Summary Judgment Regarding Amazon's Derivation Invalidity Defense</i> to <u>149</u> Sealed Document, by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 07/13/2022)
07/13/2022	<u>151</u>	Sealed Document: Defendants' Reply in Support of Motion for Summary Judgment of Invalidity Under Section 112 of <u>110</u> Sealed Motion for Summary Judgment of Invalidity Under Section 112 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Ranganath, Ravi) (Entered: 07/13/2022)
07/13/2022	<u>152</u>	Sealed Document: DEFENDANT'S REPLY IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT OF INVALIDITY UNDER 35 U.S.C. § 101 of <u>111</u> Sealed Motion DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY UNDER 35 U.S.C. § 101 by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Affidavit of Min Wu, # <u>2</u> Exhibit 14, # <u>3</u> Exhibit 15, # <u>4</u> Exhibit 16, # <u>5</u> Exhibit 17) (Hadden, J.) (Entered: 07/13/2022)
07/13/2022	<u>153</u>	Sealed Document: Amazon's Reply In Support of Daubert Motion to Exclude Expert Testimony of Roy Weinstein of <u>115</u> Sealed Motion Amazon's Daubert Motion to Exclude Expert Testimony of Roy Weinstein by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Declaration of Geoffrey R. Miller in Support (Filed Under Seal), # <u>2</u> Exhibit 23 to Declaration of Geoffrey R. Miller in Support (Filed Under Seal), # <u>3</u> Exhibit 24 to Declaration of Geoffrey R. Miller in Support (Filed Under Seal)) (Miller, Geoffrey) (Entered: 07/13/2022)
07/13/2022	<u>154</u>	ATTACHMENT <i>Exhibit 22 to Declaration of Geoffrey R. Miller in Support of Amazon's Reply in Support of Daubert Motion to Exclude Expert Testimony of Roy Weinstein</i> to <u>153</u> Sealed Document,, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Miller, Geoffrey) (Entered: 07/13/2022)
07/13/2022	<u>155</u>	Sealed Document: Defendants' Reply in support of Motion for Summary Judgment of NonInfringement of <u>117</u> Sealed Motion for Summary Judgment of NonInfringement by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC by

		Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Wang, Allen) (Entered: 07/13/2022)
07/13/2022	<u>156</u>	AFFIDAVIT in Support of <u>155</u> Sealed Document, <i>Reply Declaration of Allen Wang in Support of Defendants' Motion for Summary Judgment of NonInfringement</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Wang, Allen) (Entered: 07/13/2022)
07/13/2022	<u>157</u>	Sealed Document: <i>Sealed Exhibits 30, 31, 32 and 33 to the Reply Declaration of Allen Wang in Support of Defendants' Motion for Summary Judgment of NonInfringement</i> of <u>156</u> Affidavit in Support, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Exhibit 30 to the Reply Declaration of Allen Wang, # <u>2</u> Exhibit 31 to the Reply Declaration of Allen Wang, # <u>3</u> Exhibit 32 to the Reply Declaration of Allen Wang, # <u>4</u> Exhibit 33 to the Reply Declaration of Allen Wang) (Wang, Allen) (Entered: 07/13/2022)
07/15/2022	<u>158</u>	Redacted Copy of <i>Plaintiff's Reply in support of Motion to Exclude Testimony of Defendants' Damages Expert and to Strike Portions of Defendants' Damages Expert Report</i> of <u>147</u> Sealed Document, by BROADBAND iTV, INC.. (Day, Margaret) (Entered: 07/15/2022)
07/15/2022	<u>159</u>	Redacted Copy <i>Plaintiff's Reply in support of Its Motion to Exclude and Strike Improper Expert Opinions Regarding the Meaning of Claim Terms</i> of <u>148</u> Sealed Document, by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 07/15/2022)
07/15/2022	<u>160</u>	Redacted Copy <i>Plaintiff's Reply in support of Its Motion for Summary Judgment Regarding Amazon's Derivation Invalidity Defense</i> of <u>149</u> Sealed Document, by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 07/15/2022)
07/15/2022	<u>161</u>	Redacted Copy of <i>Defendants' Reply in support of Motion for Summary Judgment of Invalidity Under Section 112</i> of <u>151</u> Sealed Document, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Ranganath, Ravi) (Entered: 07/15/2022)
07/15/2022	<u>162</u>	Redacted Copy of <i>Defendants' Reply in Support of Motion for Summary Judgment of NonInfringement</i> of <u>155</u> Sealed Document, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Wang, Allen) (Entered: 07/15/2022)
07/15/2022	<u>163</u>	Redacted Copy of <i>Defendants' Reply in Support of Daubert Motion to Exclude Expert Testimony of Roy Weinstein</i> of <u>153</u> Sealed Document,, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Miller, Geoffrey) (Entered: 07/15/2022)
07/15/2022	<u>164</u>	Redacted Copy of <i>Defendants' Reply in Support of Motion for Summary Judgment of Invalidity Under 35 U.S.C. Section 101</i> of <u>152</u> Sealed Document,, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Hadden, J.) (Entered: 07/15/2022)
07/25/2022	<u>165</u>	Sealed Motion Plaintiff's Motions in Limine by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit 2, # <u>2</u> Exhibit 7, # <u>3</u> Exhibit 9, # <u>4</u> Exhibit 10, # <u>5</u> Exhibit 11, # <u>6</u> Exhibit 12, # <u>7</u> Exhibit 13, # <u>8</u> Exhibit 16, # <u>9</u> Exhibit 19, # <u>10</u> Exhibit 20, # <u>11</u> Exhibit 21) (Kramer, Robert) (Entered: 07/25/2022)
07/25/2022	<u>166</u>	ATTACHMENT <i>Declaration of Robert F. Kramer in Support of Plaintiff's Motions in Limine</i> to <u>165</u> Sealed Motion Plaintiff's Motions in Limine by BROADBAND iTV, INC. by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 3, # <u>3</u> Exhibit 4, # <u>4</u> Exhibit 5, # <u>5</u> Exhibit 6, # <u>6</u> Exhibit 8, # <u>7</u> Exhibit 14, # <u>8</u> Exhibit 15, # <u>9</u> Exhibit 17, # <u>10</u> Exhibit 18, # <u>11</u> Proposed Order)(Kramer, Robert) (Entered: 07/25/2022)
07/25/2022	<u>167</u>	MOTION in Limine by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Affidavit of Ravi R. Ranganath ISO Motion in Limine, # <u>2</u> Exhibit 1, # <u>3</u> Exhibit 2, # <u>4</u> Exhibit 3, # <u>5</u> Proposed Order)(Ranganath, Ravi) (Entered: 07/25/2022)
07/27/2022	<u>168</u>	ORDER RESETTING Zoom Pretrial Conference for 8/30/2022 09:00 AM before Judge Alan D Albright. Signed by Judge Alan D Albright. (bot3) (Entered: 07/27/2022)

08/01/2022	<u>169</u>	Redacted Copy of <u>165</u> Sealed Motion Plaintiff's Motions in Limine by BROADBAND iTV, INC. by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 08/01/2022)
08/01/2022	<u>170</u>	Sealed Document: Plaintiff's Opposition to Defendants' Motions in Limine of <u>167</u> MOTION in Limine by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit A) (Kramer, Robert) (Entered: 08/01/2022)
08/01/2022	<u>171</u>	ATTACHMENT <i>Declaration of Robert F. Kramer in Support of Plaintiff's Opposition to Defendants' Motions in Limine</i> to <u>170</u> Sealed Document by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 08/01/2022)
08/01/2022	<u>172</u>	NOTICE <i>Joint Notice Concerning an Extension of the Deadline for Filing the Pretrial Order</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Young, Eric) (Entered: 08/01/2022)
08/01/2022	<u>173</u>	Sealed Document: Amazon's Opposition to BBiTV's Motions in Limine of <u>165</u> Sealed Motion Plaintiff's Motions in Limine by BROADBAND iTV, INC. by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Attachments: # <u>1</u> Declaration of Ravi R. Ranganath in Support of Defendants' Opposition to BBiTV's Motions in Limine, # <u>2</u> Exhibit 1 (Filed Under Seal), # <u>3</u> Exhibit 3 (Filed Under Seal), # <u>4</u> Exhibit 4 (Filed Under Seal), # <u>5</u> Exhibit 5 (Filed Under Seal), # <u>6</u> Exhibit 6 (Filed Under Seal), # <u>7</u> Exhibit 7 (Filed Under Seal), # <u>8</u> Exhibit 9 (Filed Under Seal), # <u>9</u> Exhibit 10 (Filed Under Seal), # <u>10</u> Exhibit 14 (Filed Under Seal), # <u>11</u> Exhibit 15 (Filed Under Seal), # <u>12</u> Exhibit 16 (Filed Under Seal), # <u>13</u> Exhibit 17 (Filed Under Seal)) (Ranganath, Ravi) (Entered: 08/01/2022)
08/01/2022	<u>174</u>	ATTACHMENT [ <i>Exhibits 2, 8, 11 – 13, and 18 – 20 to the Declaration of Ravi R. Ranganath in Support of Defendants' Opposition to BBiTV's Motions in Limine</i> ] to <u>173</u> Sealed Document,,, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit 2, # <u>2</u> Exhibit 8, # <u>3</u> Exhibit 11, # <u>4</u> Exhibit 12, # <u>5</u> Exhibit 13, # <u>6</u> Exhibit 18, # <u>7</u> Exhibit 19, # <u>8</u> Exhibit 20)(Ranganath, Ravi) (Entered: 08/01/2022)
08/02/2022	<u>175</u>	Pretrial Disclosures [ <i>Proposed</i> ] <i>Joint Pretrial Order</i> by BROADBAND iTV, INC.. (Attachments: # <u>1</u> Exhibit 1–Joint Trial Exhibit List, # <u>2</u> Exhibit 4–Plaintiffs Trial Witness List, # <u>3</u> Exhibit 5–Defendants' Trial Witness List, # <u>4</u> Exhibit 6–Plaintiffs Deposition Designations, # <u>5</u> Exhibit 7–Defendants' Deposition Designations, # <u>6</u> Exhibit 8A–Requested Jury Instructions, # <u>7</u> Exhibit 8B–Jury Charge and Interrogatories, # <u>8</u> Exhibit 9–Plaintiff's [Proposed] Verdict Form, # <u>9</u> Exhibit 10–Defendants' [Proposed] Verdict Form, # <u>10</u> Exhibit 11–Joint [Proposed] Voir Dire, # <u>11</u> Exhibit 12–Joint [Proposed] Juror Questionnaire, # <u>12</u> Exhibit 14–Defendants' Motions in Limine)(Kramer, Robert) (Entered: 08/02/2022)
08/02/2022	<u>176</u>	Sealed Document: Exhibit 2 (Plaintiffs Trial Exhibit List), Exhibit 3 (Defendants Trial Exhibit List) and Exhibit 13 (Plaintiffs Motions In Limine) to the [Proposed] Joint Pretrial Order of <u>175</u> Pretrial Disclosures,, by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit 2–Plaintiffs Trial Exhibit List, # <u>2</u> Exhibit 3–Defendants' Trial Exhibit List, # <u>3</u> Exhibit 13–Plaintiff's Motions in Limine) (Kramer, Robert) (Entered: 08/02/2022)
08/03/2022	<u>177</u>	Redacted Copy <i>Plaintiff's Opposition to Defendants' Motions in Limine</i> of <u>170</u> Sealed Document by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 08/03/2022)
08/04/2022	<u>178</u>	Redacted Copy <i>Recacted Public Version</i> of <u>173</u> Sealed Document,,, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Ranganath, Ravi) (Entered: 08/04/2022)
08/08/2022	<u>179</u>	NOTICE of <i>Plaintiff's Request for Daily Trial Transcript and Real Time Reporting</i> by BROADBAND iTV, INC. (Kramer, Robert) (Entered: 08/08/2022)
08/08/2022	<u>180</u>	NOTICE of <i>Defendants' Request for Daily Trial Transcripts and Real–Time Reporting of Court Proceedings</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC (Young, Eric) (Entered: 08/08/2022)
08/09/2022	<u>181</u>	ORDER SETTING VOIR DIRE AND PRE–VOIR DIRE CONFERENCE. Pre Voir Dire Conference set for 9/7/2022 01:30 PM before Judge Jeffrey C. Manske, Voir dire is set for 9/8/2022 09:00AM before Judge Jeffrey C. Manske. Signed by Judge Jeffrey C. Manske. (sv) (Entered: 08/09/2022)

08/10/2022	<u>182</u>	NOTICE of Plaintiff's Request for Judicial Notice by BROADBAND iTV, INC. (Attachments: # <u>1</u> Exhibit A)(Kramer, Robert) (Entered: 08/10/2022)
08/12/2022	<u>183</u>	Redacted Copy of Exhibit 2 (Plaintiff's Trial Exhibit List) of <u>176</u> Sealed Document, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Young, Eric) (Entered: 08/12/2022)
08/12/2022	<u>184</u>	Redacted Copy of Exhibit 3 (Defendants' Trial Exhibit List) of <u>176</u> Sealed Document, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Young, Eric) (Entered: 08/12/2022)
08/12/2022	<u>185</u>	MOTION to Appear Pro Hac Vice by Ravi Ranganath on Behalf of Jeffrey A. Ware ( Filing fee \$ 100 receipt number ATXWDC-16398781) by on behalf of Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Proposed Order)(Ranganath, Ravi) (Entered: 08/12/2022)
08/15/2022	<u>186</u>	ORDER GRANTING <u>185</u> Motion to Appear Pro Hac Vice for Attorney Jeffrey A. Ware. Attorney added for Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order, <b>if he/she has not previously done so for a prior case in this District</b> . Registration is managed by the PACER Service Center. Signed by Judge Alan D Albright. (bot2) (Entered: 08/15/2022)
08/15/2022	<u>187</u>	NOTICE of Filing Plaintiff's Amended Trial Witness List by BROADBAND iTV, INC. (Kramer, Robert) (Entered: 08/15/2022)
08/16/2022	<u>188</u>	MOTION to Appear Pro Hac Vice by Ravi Ranganath for Olivia L. Wheeling ( Filing fee \$ 100 receipt number ATXWDC-16411517) by on behalf of Amazon.Com, Inc.. (Ranganath, Ravi) (Entered: 08/16/2022)
08/18/2022	<u>189</u>	RESPONSE in Opposition to Plaintiff's Request for Judicial Notice to <u>182</u> Notice (Other) by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Affidavit of Eric Young, # <u>2</u> Exhibit 1, # <u>3</u> Exhibit 2)(Young, Eric) (Entered: 08/18/2022)
08/18/2022	<u>190</u>	ORDER GRANTING <u>188</u> Motion to Appear Pro Hac Vice for Attorney Olivia L. Wheeling. Attorney added for Amazon.Com, Inc. Pursuant to our Administrative Policies and Procedures for Electronic Filing, the attorney hereby granted to practice pro hac vice in this case must register for electronic filing with our court within 10 days of this order, <b>if he/she has not previously done so for a prior case in this District</b> . Registration is managed by the PACER Service Center. Signed by Judge Alan D Albright. (bot1) (Entered: 08/18/2022)
08/19/2022	<u>191</u>	STIPULATION [Joint] Notice Concerning an Extension of the Deadline for Filing Joint Notice Identifying Remaining Objections to Pretrial Disclosures and Disputes on Motions in Limine by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Young, Eric) (Entered: 08/19/2022)
08/23/2022	<u>192</u>	NOTICE to Attorneys regarding Jury Evidence Recording System (JERS) Instructions (sv) (Entered: 08/23/2022)
08/25/2022	<u>193</u>	ORDER RESETTING Pretrial Conference for 8/30/2022 01:30 PM in Waco before Judge Alan D Albright. Signed by Judge Alan D Albright. (bot2) (Entered: 08/25/2022)
08/25/2022	<u>194</u>	RESPONSE (REPLY IN SUPPORT OF REQUEST FOR JUDICIAL NOTICE) to <u>189</u> Response, <u>182</u> Notice (Other) by BROADBAND iTV, INC.. (Hill, Jack) (Entered: 08/25/2022)
08/25/2022	<u>195</u>	NOTICE (Joint Notice Identifying Remaining Objections to Pretrial Disclosures and Disputes on Motions in Limine) by BROADBAND iTV, INC. (Kramer, Robert) (Entered: 08/25/2022)
08/30/2022	<u>196</u>	Minute Entry for proceedings held before Judge Alan D Albright: Pretrial Conference held on 8/30/2022. STATEMENTS AND ARGUMENTS OF COUNSEL HEARD, MOTION TAKEN UNDER ADVISEMENT, WRITTEN ORDER FORTHCOMING, case will be temporarily stayed. The case will come off the trial docket until further

		written notice from the Court. (Minute entry documents are not available electronically). (Court Reporter Kristie Davis)(sv) (Entered: 08/30/2022)
08/30/2022	<u>197</u>	ORDER CANCELLING JURY SELECTION AND TRIAL. Signed by Judge Alan D Albright. (sv) (Entered: 08/30/2022)
08/31/2022	<u>198</u>	TRANSCRIPT REQUEST by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC for proceedings held on 8/30/2022. Proceedings Transcribed: PreTrial Conference. Court Reporter: Kristie Davis. (Ranganath, Ravi) (Entered: 08/31/2022)
08/31/2022	<u>199</u>	TRANSCRIPT REQUEST by BROADBAND iTV, INC. for proceedings held on 08/30/2022. Proceedings Transcribed: PreTrial Conference. Court Reporter: Kristie Davis. (Kramer, Robert) (Entered: 08/31/2022)
09/09/2022	<u>200</u>	Transcript filed of Proceedings held on 8-30-22, Proceedings Transcribed: Pretrial Conference. Court Reporter/Transcriber: Kristie Davis (kmdaviscsr@yahoo.com), Telephone number: 2546660904. (kd) (Entered: 09/09/2022)
09/16/2022		Parties shall comply with Judge Albright's updated <u>standing orders</u> available by clicking the included hyperlinks.  The updated orders are as follows: 1. <u>Standing Order Governing Proceedings Patent Cases</u> , 2. <u>Amended Standing Order On Pretrial Procedures and Requirements in Civil Cases</u> . (bot4) (Entered: 09/17/2022)
09/19/2022	<u>201</u>	ORDER FOR SUPPLEMENTAL BRIEFING. Signed by Judge Alan D Albright. (sv) (Entered: 09/19/2022)
09/20/2022	<u>210</u>	CLAIM CONSTRUCTION ORDER AND MEMORANDUM IN SUPPORT THEREOF. Signed by Judge Alan D Albright. (zv) (Entered: 10/31/2022)
09/26/2022	<u>202</u>	BRIEF <i>Plaintiff's Proposed Findings of Fact and Conclusions of Law</i> regarding <u>201</u> Order by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 09/26/2022)
09/26/2022	<u>203</u>	BRIEF <i>OF DEFENDANTS' PROPOSED FINDINGS OF FACTS AND CONCLUSIONS OF LAW REGARDING PATENT ELIGIBILITY</i> regarding <u>201</u> Order by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Hadden, J.) (Entered: 09/26/2022)
09/30/2022	<u>204</u>	MEMORANDUM OPINION AND ORDER GRANTING <u>111</u> Sealed Motion DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY UNDER 35 U.S.C. § 101. Signed by Judge Alan D Albright. (zv) (Entered: 09/30/2022)
10/24/2022	<u>205</u>	FINAL JUDGMENT. Signed by Judge Alan D Albright. (zv) (Entered: 10/25/2022)
10/25/2022	<u>206</u>	Report on Patent/Trademark sent to U.S. Patent and Trademark Office. (bot1) (Entered: 10/25/2022)
10/25/2022	<u>207</u>	Appeal of Final Judgment <u>205</u> by BROADBAND iTV, INC.. <i>to the United States Court of Appeals for the Federal Circuit</i> ( Filing fee \$ 505 receipt number ATXWDC-16674743) (Kramer, Robert) (Entered: 10/25/2022)
10/25/2022		Notice of Appeal to the Federal Circuit following <u>207</u> Notice of Appeal (E-Filed) by BROADBAND iTV, INC. Filing fee \$ 505, receipt number ATXWDC-16674743. (zv) (Entered: 10/25/2022)
10/25/2022	<u>208</u>	Information Sheet and Transmittal Letter to the US Court of Appeals for the Federal Circuit. (zv) (Entered: 10/25/2022)
10/31/2022	<u>209</u>	ORDER TO PAY TECHNICAL ADVISOR. Signed by Judge Alan D Albright. (zv) (Entered: 10/31/2022)
11/07/2022	<u>211</u>	BILL OF COSTS by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Attachments: # <u>1</u> Exhibit A – Service of Process, # <u>2</u> Exhibit B – Deposition Transcript Costs, # <u>3</u> Exhibit C – Hearing Transcript Costs, # <u>4</u> Exhibit D – Printing Costs, # <u>5</u> Exhibit E – Exemplification Costs, # <u>6</u> Exhibit F – Court



		Appointed Experts)(Young, Eric) (Entered: 11/07/2022)
11/14/2022	<u>212</u>	RESPONSE <i>Plaintiff's Objections</i> to <u>211</u> Bill of Costs, by BROADBAND iTV, INC.. (Kramer, Robert) (Entered: 11/14/2022)
11/22/2022	<u>213</u>	STIPULATION <i>Joint Stipulation Extending Time re Defendants' Motion to Tax Costs</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Young, Eric) Modified on 11/22/2022. Clerk's Office contacted Defendant's counsel to inform date listed in document for Dkt. 205 appears incorrect (zv). (Entered: 11/22/2022)
11/29/2022	<u>214</u>	STIPULATION <i>Regarding Bill of Costs re 211 and 212</i> by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Young, Eric) Modified on 11/30/2022 to link; however, defendant's counsel was contacted to refile Stipulation as a Motion per NMLc (zv). (Entered: 11/29/2022)
11/30/2022	<u>215</u>	Joint MOTION <i>to Tax Costs</i> re <u>214</u> Stipulation, by Amazon Web Services, Inc., Amazon.Com, Inc., Amazon.com Services LLC. (Young, Eric) (Entered: 11/30/2022)
12/01/2022		Text Order GRANTING <u>215</u> Motion entered by Judge Alan D Albright. It is hereby ORDERED that the clerk will tax costs in favor of Amazon in the amount of \$113,000.00; and Amazon shall recover its costs in that amount. (This is a text-only entry generated by the court. There is no document associated with this entry.) (NMLc) (Entered: 12/01/2022)
12/02/2022	<u>216</u>	BILL OF COSTS. (zv) (Entered: 12/02/2022)

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,	§	
	§	Case No. 6:20-cv-921
	§	
Plaintiff,	§	
	§	
v.	§	
	§	JURY TRIAL DEMANDED
AMAZON.COM, INC., AMAZON.COM	§	
SERVICES LLC and AMAZON WEB	§	
SERVICES, INC.,	§	
	§	
Defendants.	§	
	§	

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**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Broadband iTV, Inc. (“BBiTV”), by and through the undersigned counsel, hereby files this complaint (“Complaint”) against Defendants Amazon.com, Inc. (“Amazon.com”), Amazon.com Services LLC (“Amazon Services”) and Amazon Web Services, Inc. (“AWS”) (collectively “Amazon”) and alleges as follows upon actual knowledge with respect to itself and its own acts and upon information and belief as to all other matters.

**NATURE OF THE ACTION**

1. This is an action for patent infringement. BBiTV alleges that Amazon infringes U.S. Patent Nos. 10,028,026 (the “’026 Patent”), 10,506,269 (the “’269 Patent”), 9,648,388 (the “’388 Patent”), 10,536,750 (the “’750 Patent”), 10,536,751 (the “’751 Patent”), and 9,973,825 (the “’825 Patent”), copies of which are attached hereto as **Exhibits A-F**, (collectively “the Asserted Patents”).

2. BBiTV alleges that Amazon directly and indirectly infringes the Asserted Patents by making, using, offering for sale, selling and importing, among other things, internet-

**UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,

Plaintiff,

v.

AMAZON.COM, INC., AMAZON.COM  
SERVICES LLC, and AMAZON WEB  
SERVICES, INC.,

Defendants.

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NO. 6:20-cv-921-ADA

**PUBLIC REDACTED VERSION**

**PLAINTIFF BROADBAND iTV, INC.'S OPENING CLAIM CONSTRUCTION BRIEF**

*database* with each request by a viewer, *enabling the system to display* updated navigation choices and content simply by updating the database with updated links and video content.” See e.g., Ex. 1, ’388 patent<sup>1</sup>, 7:16-21. The specification does not limit the generation of the templated display to solely an end user client device, such as a set-top box or subscriber device, but rather more generally states that “*the system*” generates the templated VOD display. Thus, the patentee expressly did not cabin generation of the templated VOD display to the set-top box or subscriber device.

In short, there is no basis for Defendants’ proposed construction that would unduly limit the term to a display that has to be “*generated by the set-top box or subscriber device* using display templates.” This is another attempt by Defendants to “read-in” a limitation that is simply not in the claims.

#### I. “display templates”

Patent (claim)	BBiTV’s Construction	Defendants’ Construction
’388 (1) ’750 (1) ’751 (1) ’026 (1) ’269 (1)	Plain and ordinary meaning.	“display frames in which defined areas are reserved for text, display image(s), and navigation links (buttons)”

The dispute is whether the simple phrase “display templates” should be given its plain meaning or whether the word “template” should be replaced with “frames in which defined areas are reserved for text, display image(s), and navigation links (buttons),” as Defendants propose. Because the plain language of the claims does not require any of the additional limitations included in Defendants’ construction and there is no lexicography or disavowal of claim scope, the term

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<sup>1</sup> The ’388 patent, ’750 patent and ’751 patent share the same specification as continuations of the parent ’997 patent, which is also incorporated by reference into the ’026 and ’269 patents.

should be given its plain meaning.

The words “display” and “templates” are well understood and their combination as a phrase has a natural meaning that requires no construction. *See Altiris*, 318 F.3d at 1372. The meaning of terms “display” and “templates” can be easily discerned without any additional construction. The “established meanings of the individual words” leads to the “common meaning” of the whole phrase, *e.g.*, templates for a display. *Altiris*, 318 F.3d at 1372.

Defendants use the word “display” in their proposed construction, but replace the simple word “templates” with “frames in which defined areas are reserved for text, display image(s), and navigation links (buttons).” In doing so, Defendants attempt to inject extraneous limitations into each of the independent claims across five of the patents-in-suit. These additional limitations are not requirements of the claim and should not be “tacked on” as Defendants propose.

With respect to claim 1 of the ’388 patent, the term “display templates” is used generally without reference to “defined areas,” “text,” “display images,” “navigation links” or “buttons.” Ex. 1, ’388 patent, claim 1 (“ . . . wherein a plurality of different video display templates are accessible to the set-top box, and wherein the video-on-demand content menu is generated using at least one of the plurality of different video display templates and based at least upon the respective specified metadata.”). Defendants’ proposed construction would inject unrelated limitations into claim 1 of the ’388 patent where they have no purpose other than improperly narrowing the claim. Some of these concepts are included in *dependent* claims of the ’388 patent. For example, dependent claim 8 recites that “at least one of the plurality of templates is configured to provide *navigation buttons*.” Ex. 1, ’388 patent, claim 8. Dependent claim 9 recites that “at least one of the plurality of templates is configured to provide *viewer selection options*” (*e.g.*, “links”). *Id.* at claim 9. Dependent claim 10 includes the concept of metadata including a “*display*

*image.*” *Id.* at claim 10. The fact that these dependent claim limitations were intentionally left out of independent claim 1 means that they should not be read into claim 1 now. *Seachange Int’l, Inc.*, 413 F.3d at 1368-1369.

Similarly, neither of the independent claims of the ’750 and ’751 patents include the additional limitations that Defendants propose. In both claims, display templates are described generally and without reference to “display areas,” “text,” “navigation links,” “display images,” or “buttons.” *See, e.g.*, Ex. 3, ’750 patent, claim 1 (“wherein a plurality of different display templates, including a first display template, are accessible”); Ex. 4, ’751 patent, claim 1 (“wherein a plurality of different display templates, including a first display template, are accessible”). Defendants’ proposed construction would add unrelated limitations into claim 1 of the ’750 and ’751 patents where they have no purpose other than improperly narrowing the claim. Again, these concepts are included in certain *dependent* claims of these patents. For example, dependent claim 5 recites that “at least one of the plurality of different display templates is configured to provide *navigation buttons.*” Ex. 3, ’750 patent, claim 5; Ex. 4, ’751 patent, claim 5. Dependent claim 6 recites that “at least one of the plurality of different display templates is configured to provide *viewer selection options*” (*e.g.*, “links”). Ex. 3, ’750 patent, claim 6; Ex. 4, ’751 patent, claim 6. These dependent claim limitations should not be read into claim 1. *Seachange Int’l, Inc.*, 413 F.3d at 1368-1369.

Claim 1 of the ’026 and ’269 patents do include the concepts of “reserved areas” and “at least one of text, an image, a navigation link and a button” but only in connection with a “*particular* display template” of a “plurality of display templates.” The claims do not require *all* display templates to be construed in the way Defendants’ construction would require. There is no basis to import the requirements into all display templates. Defendants’ proposed construction also improperly equates a “navigation link” and “button,” referring to them as “navigation links

There is a presumption against reading a statement of purpose in the preamble as a claim limitation. *Arctic Cat Inc. v. GEP Power Prods., Inc.*, 919 F.3d 1320, 1328-29 (Fed. Cir. 2019).

Here, the phrase “method for” in the preamble of the ’825 patent signifies that this preamble states the purpose of the claimed method. If this preamble were deleted from the claim, the body of the claim still describes a structurally complete invention with all the necessary steps required to practice the claimed method. Defendants’ assertion that this preamble is limiting is simply incorrect.

**K. “Log-In step” / “logged onto” / “logs onto”**

<b>Patent (claim)</b>	<b>BBiTV’s Construction</b>	<b>Defendants’ Construction</b>
’825 (1)	Plain and ordinary meaning.	“step of entering user name and password or PIN to gain access”

The parties disagree whether the terms “Log-In step,” “logged onto,” and “logs onto” should be given their plain meaning (BBiTV’s position) or whether they should be limited to the “step of entering user name and password or PIN to gain access” (Defendants’ construction). As there is no lexicography or disavowal of claim scope that the “Log-In step” must be performed by “entering user name and password or PIN,” the Court should adopt BBiTV’s plain meaning construction. *Thorner*, 669 F.3d at 1368.

BBiTV’s construction is correct because it is consistent with the plain meaning of the term and the intrinsic record. A person of skill in the art would understand the plain meaning of the terms “log in” or “log on” to be the process of identifying oneself to a computer system and is not limited to a user name, password or PIN. Ex. 9, Shamos Decl., ¶¶ 35-42; Ex. 21, Newton’s Telecom Dictionary (2008) at 563 (defining “log in” as “the process of identifying and authenticating oneself to a computer system”); Ex. 22, Dictionary of Computing and Internet Terms (2008) at 290 (defining “log in” or “log on” as “to identify yourself as an authorized user

of a computer or a network at the beginning of a work session”). There is nothing in the plain meaning of the terms “log in” or “log on” that requires “entering user name and password or PIN.” Ex. 9, Shamos Decl., ¶¶ 35-42. Rather, entering a user name and a password or PIN is only one of many ways to identify oneself to a computer system. *Id.*

Further, the claim language is consistent with the terms’ plain meaning. The terms appear in claim 1 of the ’825 patent as follows:

allowing each respective individual viewer to access a display of their respective viewer-individualized electronic program guide through a **Log-In step** by which the respective individual viewer operating the subscriber TV system can be associated with their respective viewer-individualized electronic program guide,” “in one or more previous sessions while said respective individual viewer is **logged onto** their respective viewer-individualized electronic program guide in order to access the video-on-demand programs on the subscriber TV system,” and “at the start of each new session when said respective individual viewer **logs onto** their respective viewer-individualized electronic program guide in order to access video-on-demand programs on the subscriber TV system.

Ex. 5, ’825 patent, claim 1 (emphasis added). The claim language makes clear that these terms are referring to the process by which the individual viewer is identifying him/herself before (in the case of “Log-In Step” and “logs onto”) or after (in the case of “logged onto”) accessing the viewer-individualized electronic program guide. Importantly, claim 1 does **not** recite a “step of entering user name and password or PIN,” as required by Defendants’ construction.

The specification also supports BBiTV’s construction. For example, the specification states: “Once the viewer identifies him/herself to the VOD system by logging in to MyEPG, the system tracks all EPG navigation clicks as being those of that viewer until the TV session ends or another viewer in the same household logs in.” Ex. 5, ’825 patent at 20:18-22 (emphasis added). As with the claim language, the specification plainly shows that the phrase “logging in” is referring to the process by which “the viewer identifies him/herself to the VOD system.”

Defendants’ attempt to limit the terms “Log-In step,” “logged onto,” and “logs onto” to



include a “step of entering user name and password or PIN” conflicts with the terms’ plain meaning, the claim language, and the specification. Nothing in the claim or the specification requires that the “Log-In step” be performed by “entering user name and password or PIN.” Defendants cannot point to any lexicography or disavowal of claim scope for these terms. *See Kara Technology Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009); *Thorner*, 669 F.3d at 1366. The Court should adopt BBiTV’s plain meaning construction.

**L. “at the start of each new session”**

<b>Patent (claim)</b>	<b>BBiTV’s Construction</b>	<b>Defendants’ Construction</b>
’825 (1)	Plain and ordinary meaning.	“at the start of every new viewing session”

The issue here is whether it is proper for Defendants to limit the term “each new session” to mean “every new *viewing* session.” Here, it is improper to do so because limiting “each new session” to “every new *viewing* session” is at odds with the claim language and the teaching of the specification.

First, Defendants’ construction is directly at odds with the plain language of the claim. The term “at the start of each new session” appears in the following phrase: “**at the start of each new session** when said respective individual viewer logs onto their respective viewer-individualized electronic program guide in order to access video-on-demand programs on the subscriber TV system.” Ex. 5, ’825 patent, claim 1 (emphasis added). The term “each new session” is specifically referring to when the respective viewer logs onto the respective viewer-individualized electronic program guide and is not limited to when the viewer is viewing video-on-demand programs. The phrase “viewing session” does not even appear in claim 1 and should not be imported into this claim.

Second, the specification does not limit the term “session” to a “viewing session.” Indeed,

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,	§	
	§	Case No. 6:20-cv-921-ADA
	§	
Plaintiff,	§	
	§	
v.	§	
	§	JURY TRIAL DEMANDED
AMAZON.COM, INC., AMAZON.COM	§	
SERVICES LLC and AMAZON WEB	§	
SERVICES, INC.,	§	
	§	
Defendants.	§	
	§	

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**AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Broadband iTV, Inc. (“BBiTV”), by and through the undersigned counsel, hereby files this complaint (“Complaint”) against Defendants Amazon.com, Inc. (“Amazon.com”), Amazon.com Services LLC (“Amazon Services”) and Amazon Web Services, Inc. (“AWS”) (collectively “Amazon”) and alleges as follows upon actual knowledge with respect to itself and its own acts and upon information and belief as to all other matters.

**NATURE OF THE ACTION**

1. This is an action for patent infringement. BBiTV alleges that Amazon infringes U.S. Patent Nos. 10,028,026 (the “’026 Patent”), 9,648,388 (the “’388 Patent”), 10,536,750 (the “’750 Patent”), 10,536,751 (the “’751 Patent”), and 9,973,825 (the “’825 Patent”), copies of which are attached hereto as **Exhibits A-E** (collectively “the Asserted Patents”).

2. BBiTV alleges that Amazon directly and indirectly infringes the Asserted Patents by making, using, offering for sale, selling and importing, among other things, internet-connected digital devices (“ICDDs”) sold under the “Fire” brand and mobile device apps that

District. Within this state, Amazon has used the inventions of the Asserted Patents thereby committing, and continuing to commit, acts of patent infringement alleged herein. In addition, Amazon has derived revenues from its infringing acts occurring within the Western District of Texas. Further, Amazon is subject to the Court's general jurisdiction, including from regularly doing or soliciting business, engaging in other persistent courses of conduct, and deriving substantial revenue from goods and services provided to persons or entities in Texas and the Western District of Texas. Further, Amazon is subject to the Court's personal jurisdiction at least due to its sale of products or services within Texas and the Western District of Texas. Amazon has committed such purposeful acts or transactions in Texas such that they reasonably should know and expect that they could be hauled into this Court because of such activity.

**COUNT I – INFRINGEMENT OF U.S. PATENT NO. 10,028,026**

17. The allegations of paragraphs 1-16 of this Complaint are incorporated by reference as though fully set forth herein.

18. The '026 Patent, titled "System for addressing on-demand TV program content on TV services platform of a digital TV services provider," issued on July 17, 2018. A copy of the '026 Patent is attached as **Exhibit A**.

19. Pursuant to 35 U.S.C. § 282, the '026 Patent is presumed valid.

20. Upon information and belief, Amazon infringes at least claim 1 of the '026 Patent literally and/or under the doctrine of equivalents because it makes, uses, offers for sale, and/or sells in the United States and/or imports into the United States products and services that provide Amazon's subscribers with video on-demand services on their ICDDs and mobile device apps (collectively the "Accused '026 Patent Products"). Specifically, Amazon, by and through its various operator subsidiaries, provides ICDDs such as the Fire TV Stick streaming media player,

the Fire TV 4K Stick streaming media player, Fire TV Cube, Fire TV Recast, and the Fire TV Blaster for receiving, via the Internet, video content to be viewed by VOD system subscribers. Likewise, Amazon provides apps, such as the Amazon Prime Video app available for iOS devices on Apple's App Store, Android devices on Google Play, and other ICDDs. Amazon's apps loaded onto subscribers' ICDDs—including smartphones, tablets, smart TVs and set-top boxes—for receiving, via the Internet, video content to be viewed by VOD system subscribers.

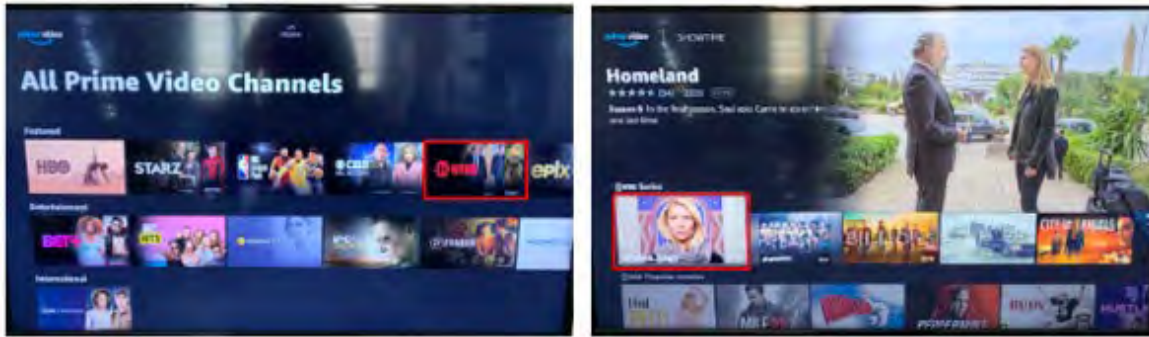
21. Exemplary claim 1 of the '026 Patent claims:

An Internet-connected digital device for receiving, via the Internet, video content to be viewed by a subscriber of a video-on-demand system using a hierarchically arranged electronic program guide,

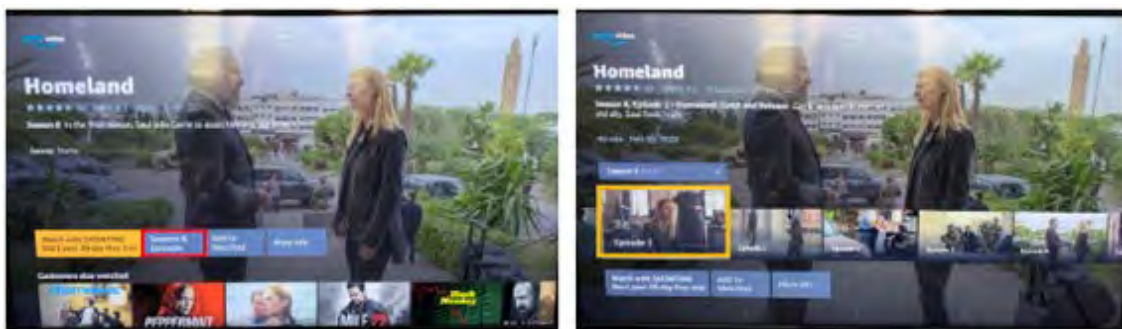
the Internet-connected digital device being configured to obtain and present to the subscriber an electronic program guide as a templated video-on-demand display, which uses at least one of a plurality of different display templates to which the Internet-connected digital device has access, to enable a subscriber using the Internet-connected digital device to navigate in a drill-down manner through titles by category information in order to locate a particular one of the titles whose associated video content is desired for viewing on the Internet-connected digital device using the same category information as was designated by a video content provider in metadata associated with the video content;

wherein the templated video-on-demand display has been generated in a plurality of layers, comprising:

- (a) a first layer comprising a background screen to provide at least one of a basic color, logo, or graphical theme to display;
- (b) a second layer comprising a particular display template from the plurality of different display templates layered on the background screen, wherein the particular display template comprises one or more reserved areas that are reserved for displaying content provided by a different layer of the plurality of layers; and
- (c) a third layer comprising reserved area content generated using the received video content, the associated metadata, and an associated plurality of images to be displayed in the one or more reserved areas in



26. In the Accused '026 Patent Products, “[t]he Internet-connected digital device [is] configured to obtain and present to the subscriber an electronic program guide as a templated video-on-demand display, which uses at least one of a plurality of different display templates to which the Internet-connected digital device has access, to enable a subscriber using the Internet-connected digital device to navigate in a drill-down manner through titles by category information in order to locate a particular one of the titles whose associated video content is desired for viewing on the Internet-connected digital device using the same category information as was designated by a video content provider in metadata associated with the video content.” At this end of this exemplary drill down through titles by category information, the subscriber may choose a Season and Episode and select Episode 2 of “Homeland” for viewing.



27. In the Accused '026 Patent Products, “[t]he Internet-connected digital device [is] configured to obtain and present to the subscriber an electronic program guide as a templated video-on-demand display, which uses at least one of a plurality of different display templates to



## Publishing requirements

All titles must include the following information:

- **Title Name** — This is how customers will be able to identify and search for your title. The title name must be displayed on your graphic assets exactly as it's entered in this field.
- **Category** — This indicates the type of programming and usually corresponds to its duration (like movie, short film, educational, or clips). If your content doesn't fall into one of our defined categories, the content is ineligible for submission via Prime Video Direct. For more information, see [Publishing FAQs - How do I select the appropriate Category for my title?](#)
- **Title Metadata Language** — This is the language of the Title Name, synopsis, and title details. Available locations are based on the metadata language you select when adding a title. You can only select one metadata language per title and it can't be changed after selected. For more information, see [Location Requirements](#).
- **Synopsis** — This is a short description of your title, what it's about, and how to describe it. The Synopsis is presented to customers when they view the title detail page so it's best to make it both informative and interesting.
- **Genre** — Genres help viewers know the stylistic format they can expect (like science fiction, comedy, or drama). We also use them in search, personalization, and categorization of content. Note: Prime video may add or remove genres to improve discoverability. For a complete list, see [Genre Definitions](#).
- **Country of Origin** — The most significant factor to consider when determining the country of origin of a work is the place of establishment of the production company (or companies).
- **Rating** — Regulators or organizations in each marketplace create ratings criteria for movies and TV shows, however if your title is not officially rated, you must select **Suggested Rating - Title not officially rated**.
- **Cast and Crew Information** — A minimum of one crew member must be added, but we recommend that you also enter at least key actors for improved search discoverability on Prime Video. If you're publishing a movie or TV show, then you must provide a Director.
- **Mezzanine File** — Prime Video Direct supports video resolutions up to 1920x1080p. (4K UHD content isn't supported at this time.) Our software automatically adjusts the delivery streams to a resolution appropriate to the customer's device and connection speed. For more information, see [Mezzanine Requirements](#).
- **Captions File** — Amazon is a customer-obsessed company and captions help ensure a consistent viewing experience for all customers, including those who might be hearing-impaired, are non-native English speakers. For more information, see [Captions Requirements](#).
- **Key Art** — Key art represents your title on Prime Video. Key art is required in two aspect ratios for episodic and standalone titles and must display your exact title name. For more information, see [Art requirements](#).
- **Availability Options** — You can select which territories and how you want to make your title available to Amazon Customers (remember, eligible locations depend on the metadata language you selected when adding your title). For more information, see [Royalty information](#).

<https://videocentral.amazon.com/home/help?topicId=GG5QNX4NA2MEWRRA>

## Getting Started – 3 “Must Have” Assets and Top Tips

There are 3 major assets you need to have before getting started:

	1 Mezzanine File	2 Captions File	3 Key Art / Graph Assets
<b>Description</b>	A mezzanine file is a compressed master video file used to produce additional compressed video streams and downloads. We automatically prepare your file for use across all platforms and streaming qualities. See <a href="#">Mezzanine Requirements</a> for more information.	Amazon is a customer-obsessed company and captions help ensure a consistent viewing experience for all customers, including those who might be hearing-impaired, are non-native English speakers. See <a href="#">Captions Requirements</a> for more details.	Key art represents your title on Prime Video. Key art is required in two aspect ratios for episodic/standalone titles and must display your exact title name. See <a href="#">Art Requirements</a> for more information.
<b>Common Errors</b>	<ul style="list-style-type: none"> <li>• Watermark/Logo/URL</li> <li>• Mismatched video and audio durations</li> <li>• Extended silent periods, silent audio channels</li> </ul>	<ul style="list-style-type: none"> <li>• Out of sync/incoherent</li> <li>• Improper time-code (hours:minutes:seconds,milliseconds)</li> <li>• Improper formatting</li> </ul>	<ul style="list-style-type: none"> <li>• Padded images/Stretched/narrowed images</li> <li>• Title name not displayed</li> <li>• Improper Aspect Ratio.</li> </ul>
<b>Top Tips</b>	<ul style="list-style-type: none"> <li>• Use <a href="#">Interra Baton software</a> to perform quality control on video files prior to delivery.</li> <li>• Choose "constant frame rate" instead of "variable frame rate."</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Download this collection of sample files</a> to help understand required formats.</li> <li>• Ensure captions are in sync by playing the video and looking at timecodes at the beginning, middle, and end.</li> </ul>	<ul style="list-style-type: none"> <li>• For additional details and examples of key art, see the <a href="#">Graphic Assets Guide</a>.</li> <li>• Create original images, don't use borders or padding and don't stretch or narrow images to fit the aspect ratio.</li> </ul>

All titles undergo a multi-factor review to help ensure they meet our policies and guidelines. Be sure to check our [Errors and Troubleshooting support page](#).

**COUNT II – INFRINGEMENT OF U.S. PATENT NO. 9,648,388**

45. The allegations of paragraphs 1-44 of this Complaint are incorporated by reference as though fully set forth herein.

46. The '388 Patent, titled "Video-on-demand content delivery system for providing video-on-demand services to TV services subscribers" issued on May 9, 2017. A copy of the '388 Patent is attached as **Exhibit B**.

47. Pursuant to 35 U.S.C. § 282, the '388 Patent is presumed valid.

48. Upon information and belief, Amazon makes, uses, offers for sale, and/or sells in the United States and/or imports into the United States products and services that provide Amazon's subscribers with video-on-demand services using ICDDs (collectively the "Accused '388 Patent Products").

49. Upon information and belief, the Accused '388 Patent Products infringe literally and/or under the doctrine of equivalents at least claim 1 of the '388 Patent in the exemplary manner described below.

50. Exemplary claim 1 of the '388 patent claims:

A set-top box, providing video-on-demand services and operatively connected to TV equipment of a TV service subscriber, programmed to perform the steps of:

- (a) receiving, at the set-top box, via a closed system from a video-on-demand content delivery system comprising one or more computers and computer-readable memory operatively connected to the one or more computers, respective video-on-demand application-readable metadata that is associated with respective video content and is usable to generate a video-on-demand content menu;

wherein the respective video content was uploaded to a Web-based content management system by a respective content provider device associated with a respective video content provider via the Internet in a digital video format along with respective specified metadata including respective title information, category information, and subcategory information designated by the respective video content provider to specify a respective hierarchical location of a respective title of the respective

commodities of commerce suitable for substantial noninfringing use. Amazon is thereby liable for contributory infringement of the '388 Patent under U.S.C. § 271(c).

69. Amazon is on notice of its infringement of the '388 Patent by no later than the filing and service of this Complaint. Amazon also received notice of its infringement of the '388 Patent on October 5, 2020 when BBiTV served Amazon with an infringement notice letter. By the time of trial, Amazon will have known and intended (since receiving such notice) that its continued actions would actively induce the infringement of at least claim 1 of the '388 Patent.

70. Upon information and belief, Amazon may have infringed and continues to infringe the '388 Patent through other software and devices utilizing the same or reasonably similar functionality, including other versions of the Accused '388 Patent Products.

71. Amazon's acts of direct and indirect infringement have caused and continue to cause damage to BBiTV. BBiTV is, therefore, entitled to recover damages sustained as a result of Amazon's wrongful acts in an amount that is proven at trial.

### **COUNT III – INFRINGEMENT OF U.S. PATENT NO. 10,536,750**

72. The allegations of paragraphs 1-71 of this Complaint are incorporated by reference as though fully set forth herein.

73. The '750 Patent, titled "Video-on-demand content delivery system for providing video-on-demand services to TV services subscribers" issued on January 14, 2020. A copy of the '750 Patent is attached as **Exhibit C**.

74. Pursuant to 35 U.S.C. § 282, the '750 Patent is presumed valid.

75. Upon information and belief, Amazon makes, uses, offers for sale, and/or sells in the United States and/or imports into the United States products and services that provide Amazon's subscribers with video-on-demand services using ICDDs (collectively the "Accused '750 Patent Products").



111. Amazon's acts of direct and indirect infringement have caused and continue to cause damage to BBiTV. BBiTV is, therefore, entitled to recover damages sustained as a result of Amazon's wrongful acts in an amount that is proven at trial.

**COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 10,536,751**

112. The allegations of paragraphs 1-111 of this Complaint are incorporated by reference as though fully set forth herein.

113. The '751 Patent, titled "Video-on-demand content delivery system for providing video-on-demand services to TV services subscribers" issued on January 14, 2020. A copy of the '751 Patent is attached as **Exhibit D**.

114. Pursuant to 35 U.S.C. § 282, the '751 Patent is presumed valid.

115. Upon information and belief, Amazon makes, uses, offers for sale, and/or sells in the United States and/or imports into the United States products and services that provide Amazon's subscribers with video-on-demand services using ICDDs (collectively the "Accused '751 Patent Products").

116. Upon information and belief, the Accused '751 Patent Products infringe literally and/or under the doctrine of equivalents at least claim 1 of the '751 Patent in the exemplary manner described below.

117. Exemplary claim 1 of the '751 patent claims:

A video-on-demand application server system comprising one or more computers and computer-readable memory operatively connected to the one or more computers of the video-on-demand application server system, and programmed to perform at least the following steps:

(a) receiving, by the video-on-demand application server system from a Web-based content management system, first video-on-demand application-readable metadata associated with first video content and usable to generate a video-on-demand content menu,

as was designated by one or more video content providers, including the first video content provider, in the uploaded first video-on-demand application-readable metadata for the respective video content. The video-on-demand content menu lists titles using the same hierarchical structure of category information and subcategory information as was designated by one or more video content providers. This information was designated in the uploaded first video-on-demand application-readable metadata for the respective video content.



143. In the Accused '751 Patent Products, the video-on-demand content menu lists the titles using the same hierarchical structure of category information and subcategory information as was designated by one or more video content providers, including the first video content provider, in the uploaded first video-on-demand application-readable metadata for the respective video content, wherein a plurality of different display templates, including a first display template, are accessible. A plurality of different display templates are accessible. For example, a template showing a list of titles available in several subcategories of the "Action and adventure" category are shown on the left. This is a template because a list of titles available in several subcategories of the "Drama" category are shown on the right, in the same format.



144. A second template of the plurality of different display templates for selecting an episode of Tom Clancy's Jack Ryan is shown below, to the left. This template is shown during the selection of an episode of a TV series. This is a template because a list of episodes in the TV show "The Expanse" are shown on the right, in the same format.



145. In the Accused '751 Patent Products titles "are available for selection from the video-on-demand content menu, at a respective time, [which] is based at least in part on respective time information during which the respective video content associated with the respective time information can be accessed." For example, Prime Video Direct allows content providers to schedule a time when content will be available on Prime Video. If a title is not

cause damage to BBiTV. BBiTV is, therefore, entitled to recover damages sustained as a result of Amazon's wrongful acts in an amount that is proven at trial.

**COUNT V – INFRINGEMENT OF U.S. PATENT NO. 9,973,825**

154. The allegations of paragraphs 1-153 of this Complaint are incorporated by reference as though fully set forth herein.

155. The '825 Patent, titled "Dynamic Adjustment of Electronic Program Guide Displays Based on Viewer Preference for Minimizing Navigation in VOD Program Selection" issued on May 15, 2018. A correct copy of the '825 Patent is attached as **Exhibit E**.

156. Pursuant to 35 U.S.C. § 282, the '825 Patent is presumed valid.

157. Upon information and belief, Amazon makes, uses, offers for sale, and/or sells in the United States and/or imports into the United States products and services that provide Amazon's subscribers with video-on-demand services using ICDDs (collectively the "Accused '825 Patent Products").

158. Upon information and belief, the Accused '825 Patent Products infringe literally and/or under the doctrine of equivalents at least claim 1 of the '825 Patent in the exemplary manner described below.

159. Exemplary claim 1 of the '825 patent claims:

1. A method for dynamic adjustment of an individualized electronic program guide where the adjustment is based at least in part on individual viewer consumption of video-on- 30 demand programs on a subscriber TV system to enable navigating by an individual viewer in a TV subscriber household that may have a plurality of viewers to video-on-demand programs offered on a video-on-demand platform of a digital TV services provider which is at least part of a digital TV services provider system, the method comprising:

(a) maintaining, at the digital TV services provider system, an electronic program guide database comprising electronic program guide data, and a usage history database comprising a log of selection data corresponding to the viewer's consumption of the video-on-demand programs using the video-on-demand platform;

(b) establishing, at the digital TV services provider system, viewer-individualized electronic program guide data for each of a plurality of individual viewers to enable the generation of viewer-individualized electronic program guides for each of said plurality of individual viewers at the subscriber TV system for use in accessing the video-on-demand programs, and allowing each respective individual viewer to access a display of their respective viewer-individualized electronic program guide through a Log-In step by which the respective individual viewer operating the subscriber TV system can be associated with their respective viewer-individualized electronic program guide;

(c) in one or more previous sessions while said respective individual viewer is logged onto their respective viewer-individualized electronic program guide in order to access the video-on-demand programs on the subscriber TV system, tracking, at the digital TV services provider system, said respective individual viewer's consumption of the video-on-demand programs listed in their respective viewer-individualized electronic program guide and saving the selection data in the usage history database;

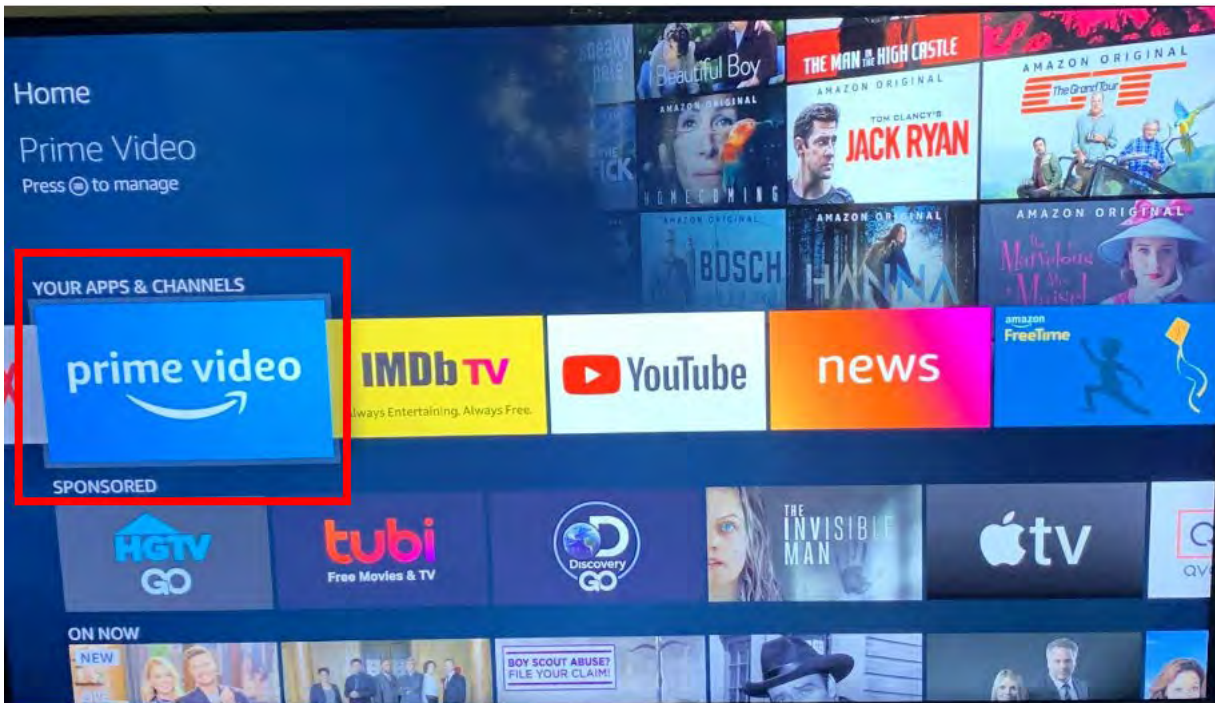
(d) determining, at the digital TV services provider system, an order of relevance of a plurality of category names for said respective individual viewer selection of video-on-demand programs from their respective viewer-individualized electronic program guide based at least in part on said respective individual viewer's selection data from said one or more previous sessions as stored in the usage history database and reflecting said respective individual viewer's preferences for selection of video-on-demand programs from their respective viewer-individualized electronic program guide, and based at least in part on the electronic program guide data in the electronic program guide database; and

(e) at the start of each new session when said respective individual viewer logs onto their respective viewer individualized electronic program guide in order to access video-on-demand programs on the subscriber TV system, reordering a current display listing of the category names for categories of video-on-demand programs on said respective individual viewer's viewer-individualized electronic program guide based at least in part on said determined order of relevance.

160. Amazon practices “[a] method for dynamic adjustment of an individualized electronic program guide where the adjustment is based at least in part on individual viewer consumption of video-on-demand programs on a subscriber TV system to enable navigating by an individual viewer in a TV subscriber household that may have a plurality of viewers to video-on-demand programs offered on a video-on-demand platform of a digital TV services provider which is at least part of a digital TV services provider system.” For example, Amazon provides



a Prime Video system for delivering video-on-demand (VOD) content to users. Users use a Prime Video App on compatible devices to log in and watch VOD content.



162. Amazon designs its devices that support Prime Video, such as its Fire tablets, Fire TV, and Echo Show in Austin TX.

## Software Development Engineer - ACS

Job ID: 1271604 | Amazon.com Services LLC

Apply now

### DESCRIPTION

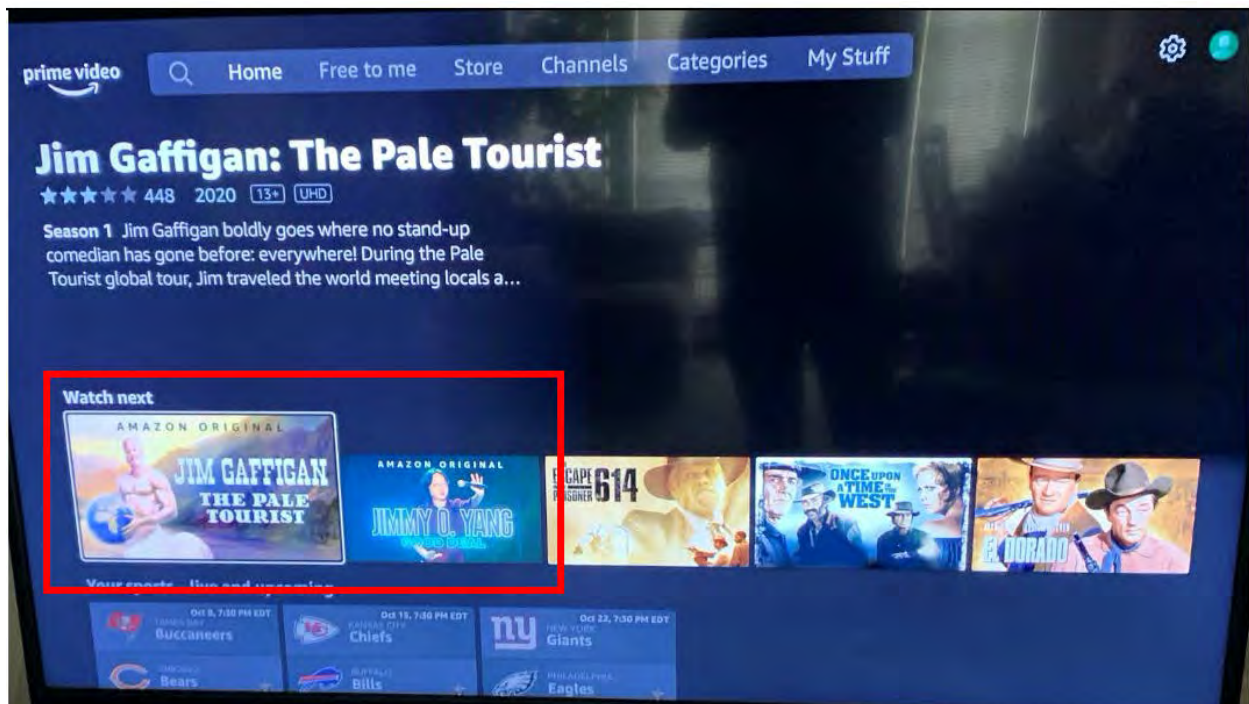
Amazon Lab126 is an inventive research and development company that designs and engineers high-profile consumer electronics. Lab126 began in 2004 as a subsidiary of Amazon.com, Inc., originally creating the best-selling Kindle family of products. Since then, we have produced groundbreaking devices like Fire tablets, Fire TV, Amazon Echo and Echo Show. The Amazon Devices group delivers delightfully unique Amazon experiences, giving customers instant access to everything, digital or physical.

<https://www.amazon.jobs/en/jobs/1271604/software-development-engineer-acs>

### Job details

- Austin, TX
- Device Software
- Software Development

163. Amazon dynamically adjusts the EPG based at least in part on a viewer's consumption of video-on-demand (VOD) programs. For example, a viewer might watch "Jim Gaffigan" and "Jimmy O. Yang" stand-up comedy specials.





164. Based on the viewer's consumption of these VOD programs, a category for "Amazon Originals stand-up comedy" is shown in the user's EPG.



165. Prime Video supports multiple profiles in a TV subscriber household that may have a plurality of viewers. For example, Amazon describes that "Amazon Household customers share Prime Video Profiles across their account." Amazon also describes that each of these profiles will have "separate recommendations, season progress and watchlist based on individual profile activity." This EPG allows users to navigate to video-on-demand programs on Amazon's Prime Video system, which is a video-on-demand platform, which is at least part of a digital TV services provider system.





<b>Term</b>	<b>Plaintiff's Proposed Construction</b>	<b>Defendants' Proposed Construction</b>	<b>Court's Final Construction</b>
“video-on-demand application-readable metadata”  U.S. Patent Nos. 9,648,388, Claim 1; 10,028,026, Claim 1; 10,536,750, Claim 1; 10,536,751, Claim 1	Plain and ordinary meaning.	“metadata that describe video-on demand content and are readable by application(s) at the set-top box to generate a content menu”	Plain-and-ordinary meaning
“specified metadata”  U.S. Patent No. 9,648,388, Claim 1	Plain and ordinary meaning.	“metadata specified by the content provider”	Plain-and-ordinary meaning
“video server”  U.S. Patent No. 9,648,388, Claim 1	Plain and ordinary meaning.	“server for storing encoded video content and for supplying requested video content for delivery to the viewer”	Plain and ordinary meaning.
“the selection”  U.S. Patent No. 9,648,388, Claim 1	“the selection of a first respective title associated with the first video content”	Indefinite.	Not indefinite. Plain-and-ordinary meaning.
“display templates”  U.S. Patent Nos. 9,648,388, Claim 1; 10,028,026, Claim 1; 10,536,750, Claim 1; 10,536,751, Claim 1	Plain and ordinary meaning.	“display frames in which defined areas are reserved for text, display image(s), and navigation links (buttons)”	Plain and ordinary meaning.

Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Final Construction
<p>“A method for dynamic adjustment of an individualized electronic program guide where the adjustment is based at least in part on individual viewer consumption of video-on-demand programs on a subscriber TV system to enable navigating by an individual viewer in a TV subscriber household that may have a plurality of viewers to video-on-demand programs offered on a video-on-demand platform of a digital TV services provider which is at least part of a digital TV services provider system, the method comprising:”</p> <p>U.S. Patent No. 9,973,825, Claim 1</p>	<p>Preamble is not limiting.</p>	<p>Preamble is limiting.</p>	<p>The preamble is not limiting except for the following terms in the preamble: “digital TV services provider system,” “the viewer,” “subscriber TV system” and “video-on-demand programs.”</p>
<p>“Log-In step” / “logged onto” / “logs onto”</p> <p>U.S. Patent No. 9,973,825, Claim 1</p>	<p>Plain and ordinary meaning.</p>	<p>“step of entering user name and password or PIN to gain access”</p>	<p>Plain and ordinary meaning.</p>

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,	§	
	§	
	§	
Plaintiff,	§	
	§	Case No. 6:20-cv-921-ADA
v.	§	
	§	
AMAZON.COM, INC., AMAZON.COM	§	
SERVICES, LLC, and AMAZON WEB	§	
SERVICES, INC.,	§	
	§	
Defendants.	§	

---

**PLAINTIFF'S OPPOSITION TO DEFENDANTS' MOTION FOR  
SUMMARY JUDGMENT OF INVALIDITY UNDER SECTION 101**

only (1) upload video content and metadata via a web interface, but also (2) facilitate the traversal of an EPG in an orderly manner by enabling drill down navigation of producer-provided categories and subcategories to locate a title of interest. The '026 patent enabled the large scale expansion of VOD content without placing a proportional burden on the service provider, whereas traditional VOD systems would not be able to handle such growth, nor provide a novel approach to locating desired content among the vast number of new programs. Claims 6 and 7 permit content providers to use a common set of category terms so that the VOD menu can accommodate content from different providers, as well as allow for provider-specific VOD menus.

## **2. Template-Driven EPG Displays**

Claim 1 of the '026 patent (emphasis added) further provides for template-driven displays used in connection with Drill Down Navigation of the EPG, which states in relevant part:

the Internet-connected digital device being configured to obtain and present to the subscriber an electronic program guide as a templatized video-on-demand display, which uses at least one of a plurality of different display templates to which the Internet-connected digital device has access . . .

wherein the templatized video-on-demand display has been generated in a plurality of layers, comprising:

(a) a first layer comprising a background screen to provide at least one of a basic color, logo, or graphical theme to display;

(b) a second layer comprising a particular display template from the plurality of different display templates layered on the background screen, wherein the particular display template comprises one or more reserved areas that are reserved for displaying content provided by a different layer of the plurality of layers; and

(c) a third layer comprising reserved area content generated using the received video content, the associated metadata, and the associated plurality of images to be displayed in the one or more reserved areas in the particular display template as at least one of text, an image, a navigation link, and a button, . . .

wherein a first template of the plurality of different display templates is used as the particular display template for the templatized display for displaying the first level of the hierarchical structure and wherein a second template of the plurality of different display templates is used as the particular display template for the templatized display for displaying the second level of the hierarchical structure . . .

'026 patent at claim 1. This feature and its variants as claimed in other asserted patents will generally be referred to herein as "Templatized EPG Display." The claim thus addresses two enabling aspects of the Templatized EPG Display, including (1) how a templatized display is composed using at least three different layers as well as information uploaded to the WBCMS, and (2) how different display templates may be used across the hierarchical structure of the EPG.

As mentioned above, enabling Internet upload of video content and metadata to closed VOD systems to accommodate increased numbers of content producers and content requires innovative solutions to improve the navigation experience for subscribers. The Templatized EPG Display standardizes the display of information uploaded to the WBCMS, such as titles and cover art, at different levels of the Drill Down hierarchy. The use of templates further minimizes the burden on the digital TV service provider to accommodate the increase in the amount of content made available on-demand, while ensuring that subscribers are not forced to scroll through endless and unformatted lists of content, as well as enabling real-time database queries.

At col. 7:18-30, the '026 patent describes an embodiment using the Templatized EPG Display having distinct layers, which is also shown in FIG. 1C:

In FIG. 1C, an example illustrates how a templatized VOD display is generated in layers. A Background screen provides a basic color, logo, or graphical theme to the display. A selected Template (display frame) appropriate to the navigation level the intended display resides on is layered on the Background. The Template typically has a frame in which defined areas are reserved for text, display image(s), and navigation links (buttons). Finally, the desired content constituted by associated Text, Image & Buttons is retrieved from the database and layered on the Template. The resulting screen display shows the combined background logo or theme, navigation frame, and text, video images, and buttons.

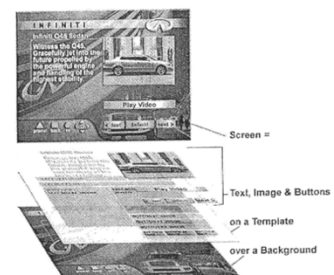


Figure 1C: Template Layer Model

At col. 6:9-20, the '026 patent describes how the Templatized EPG Display may be used at one or more levels of the Drill Down hierarchy of the EPG.

In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can

select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server 10 retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a “drill down navigation” method to find specific end content of interest.

A template need only be created once for it to be replicated across an EPG’s hierarchy, leading to a significant reduction of burden and overhead for a service provider. *See also* col. 7:3-10 describing the benefit of using templates to avoid “entirely new ads or screen displays having to be shot, produced, contracted, delivered, and programmed with the cable TV company.”

**E. The Asserted Claims of the ’750, ’751, and ’388 Patents Similarly Enhance the WBCMS Improvement**

The ’750 and ’751 claims are directed towards a video-on-demand application server system that works in tandem with the WBCMS in which content providers can designate titles, category, and subcategory information to influence how content is presented in an EPG. Claim 1 of both patents recites the Templated EPG Display feature in addition to the WBCMS. Claim 1 of the ’751 patent further requires Time Availability Metadata to be provided to the WBCMS to allow the content providers to exert additional control over when their VOD content is to be made available. Claim 7 of the ’750 patent, like claim 6 of the ’026 patent, enables content from multiple content providers to be aggregated in a single menu. Claim 3 of the ’751 patent and claim 8 of the ’750 and ’751 patents provide more specificity as to the Templated EPG Display feature.

The ’388 claims concern a (“STB”) operating downstream from a WBCMS, and like the ’026, ’750, and ’751 claims, allows content providers to designate titles, category, and subcategory information to influence how content is presented in an EPG. Claim 1 recites the Drill Down Navigation and Templated EPG Displays features and the WBCMS. Claim 13 provides more specificity as to the Templated EPG Displays feature like claim 1 of the ’026 patent.

**IV. ARGUMENT**

video content based on viewing history. Amazon has not provided a realistic real-world analog to the '825 approach of providing an individualized EPG for VOD content. These claimed improvements should render the '825 claims patentable at both Step 1 and Step 2.

Additionally, claim 1 sets forth a two-database architecture comprising “an electronic program guide database” and “a usage history database.” These databases are used in an unconventional way to present an individualized EPG having a specific ordering of category names based on an individual viewer’s consumption of VOD content. Ex. A at ¶ 1096. It does not matter that conventional databases may be used to implement the invention because they are used in an unconventional way to improve the way VOD systems and EPGs work. *Enfish*, 822 F.3d at 1338 (“Moreover, we are not persuaded that the invention’s ability to run on a general-purpose computer dooms the claims.”). The '825 claims also disclose reordering at the start of a new session when a user logs in, as opposed to predetermined intervals, which permits improved dynamic adjustments to the EPG displays listing the categories and thus improved personalization. Ex. A at ¶ 1096.

The dependent claims add inventive concepts, including simplifying the log-in process by allowing the viewer to register their name and allowing them to select their name from a list in a subsequent log-in attempt in claim 10. Although this has been popularized by services like Netflix today, this was a new concept in 2007. Ex. A at ¶¶ 1097, 1089. Claim 15 is directed to the inventive concept of adding new categories or subcategories based on viewer consumption of programs. *Id.* at ¶¶ 1098, 1090-1091. This is inventive for EPGs dating to 2007. Claim 17 adds the inventive concept of a three-database architecture for carrying out the adjustments to the individualized EPG, which again is new and confers benefits not reaped by the prior art. *Id.* at ¶¶ 1099, 1092-1093.

Amazon argues that “there is no inventive concept because the claims recite generic components such as servers, databases, and TVs, and they each perform functions inherent in the abstract idea.” Mot. at 12. But considered as an ordered combination, the '825 claims inputs from



multiple databases containing different inputs to determine an order for relevance for VOD categories and reordering those categories for navigation of an EPG “at the start of each new session when said respective viewer logs onto their respective viewer-individualized electronic program guide.” Ex. A at ¶¶ 1094-1096. This combination is more than the bare idea of presenting categories based on viewing history.

## **B. The '388, '750, '751, and '026 Patents**

### **1. Collateral Estoppel Does Not Meaningfully Apply**

As described above, the Asserted Claims of the '388, '750, '751, and '026 patents are directed to subject matter that builds upon the WBCMS recited in the '336 claims. The '336 claims do not describe Drill Down Navigation or Templatized EPG Displays, nor do they address the Time Availability Metadata enhancement to the WBCMS. Defs. Ex. 7.

The table on p. 17 of the Motion purports to compare features of the '336 claims and the '388, '750, '751, and '026 claims. This table is not accurate. For example, in an attempt to show Drill Down Navigation in the '336 claims, Amazon cites to “hierarchically-arranged categories and subcategories.” But a mere hierarchy does not require Drill Down Navigation. Ex. I, Williams Tr., at 86:25-88:10 (testifying that a table of contents is a hierarchy that does not require Drill Down Navigation). Instead of addressing Templatized EPG Displays, Amazon misleadingly only points to EPG displays (Mot. at 18) and attempts to dismiss templates as “not a technological improvement.” But that is not true when templates are incorporated as an enhancement to WBCMS and/or Drill Down Navigation to provide an end-to-end improvement to VOD systems and EPGs. The templates allow content providers to provide a large amount of VOD content to a TV service provider without requiring either party to manually take on the time-consuming work of generating menus. Amazon also does not mention Time Availability Metadata of the '751 patent in its table.

The '336 claims are also method claims, which are inherently different in scope than the

apparatus claims of the '026 and '388 patents and the system claims of the '750 and '751 patents. While some of the claims, such as claim 1 of the '388 patent may mention Drill Down Navigation or Templatized VOD Displays at a higher level, the Federal Circuit has found claims that recite “general steps” with “minimal detail” to be patent eligible when read in light of the specification. *Packet Intel. LLC v. NetScout Sys., Inc.*, 965 F.3d 1299, 1309 (Fed. Cir. 2020).

Because the Federal Circuit affirmed *Oceanic TWC* under Rule 36, there is no guidance as to whether the court agreed that the '336 claims were not directed to any technological solution, or whether it failed to provide a specific-enough improvement. *TecSec, Inc. v. Adobe Inc.*, 978 F.3d 1278, 1294 (Fed. Cir. 2020) (holding that an inquiry at Step 1 is “whether the line of specificity of solution has been crossed”). As discussed below, the '026, '750, '751, and '388 claims enhance the WBCMS in meaningful ways that parallel other non-abstract improvements.

As such, collateral estoppel cannot apply due to the differences in the claims, or alternatively, it is unclear the extent to which it would apply given the Federal Circuit’s use of Rule 36. Indeed, the PTO subsequently considered *Oceanic TWC* in connection with each of the '026, '750, '751, and '388 claims and stated in respective Notices of Allowance that the claims were not abstract. Exs. B-E, BBITV-AMZN\_0000096-97, 0000346, 0001305-06, 0003127-28.

**2. Step 1: The '026, '750, '751, and '388 Claims Are Directed to Specific Improvements to VOD and EPG Technologies**

The Drill Down Navigation and Templatized VOD Displays improvements are tied to other improvements to the VOD architecture (e.g., the WBCMS) enabling large scale ingestion of video content and metadata without requiring a proportional amount of effort by the TV service provider, and thus are not abstract at Step 1. '026 patent at 3:3-12, 17:47-51; Ex. A at ¶¶ 1041-1043, 1056. For example, using a WBCMS and Drill Down Navigation, the location where video content is to be listed can be designated by a content provider in metadata and provided to the WBCMS via the

# EXHIBIT A

**RESTRICTED – ATTORNEYS’ EYES ONLY**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,

Plaintiff,

v.

AMAZON.COM, INC., AMAZON.COM  
SERVICES, LLC, and AMAZON WEB  
SERVICES, INC.

Defendants.

Civil Action No. 6:20-cv-921-ADA

**REBUTTAL EXPERT REPORT OF DR. MICHAEL SHAMOS, PH.D., J.D.  
CONCERNING VALIDITY**

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at the time of invention. I will provide my opinions as an expert and as a person having ordinary skill in the art as they relate to § 101 analysis.

1039. I understand that a claim is not directed to an abstract idea when the claim is directed to a specific technological improvement.

1040. For the reasons set forth below, it is my opinion that the Asserted Patents are directed to patent-eligible subject matter under 35 U.S.C. § 101.

**1. Alice Step 1 for the ’026, ’388, ’750, and ’751 Patents**

1041. Regarding Alice Step I, BBiTV recognized that “VOD content offerings are expected to increase dramatically from a few ‘channels’ with a few score or hundred ‘titles’ listed on each today to scores or hundreds of channels with thousands if not millions of titles on each in the foreseeable future.” ’026 Patent, 2:66-3:3. The Asserted Patents disclose specific end-to-end solutions that improved the ingestion, processing, listing, and access of VOD content and the inventions of the Asserted Claims provided the enabling technology to achieve these results.

1042. The Asserted Claims all reference a Web-based content management system (“WBCMS”). The WBCMS bridged the gap between the open Internet where uploaded content could be of any digital media type and come from any web-based source and a VOD system on a closed digital TV service provider network, which has since been widely adopted. ’026 Patent, 16:35-36; 3:16-4:5. The WBCMS enabled content producers to upload content for viewing by subscribers on a VOD system and specify metadata for a hierarchical location for the content in an EPG. *Id.*

1043. The ’026 Patent states that its improved “VOD platform offers a gateway for greatly expanding TV viewing from a relatively small number of studio-produced program channels to a large number of new commercial publishers.” ’026 Patent, 3:3-12. “By carrying over the hierarchical address metadata into EPG navigation, the invention allows the content to be

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automatically listed in the EPG under the common addressing scheme to enable viewers to find any program of interest,” thereby relieving the service provider of overhead. ’026 Patent, 17:47-51.

1044. Traditionally, “VOD-based interactive television services generally allow a viewer to use the remote control to cursor through an on-screen menu and select from a variety of titles for stored video programs for individual viewing on demand.” ’026 Patent, 2:24-28. Scrolling through thousands of titles or more is cumbersome. The ’026 Patent recognized that it was “desirable to find a way for such vast numbers of content publishers to transmit their programs to the home TV, and to enable home TV viewers to find something of interest for viewing among the vast numbers of new programs.” ’026 Patent, 3:8-12.

1045. The Asserted Claims of the ’026 Patent are directed to an Internet-connected digital device that operates in a WBCMS environment with additional enhancements including to (1) streamline user navigation of an EPG to locate titles of interest; and (2) provide display templates to seamlessly integrate VOD metadata from a multitude of content providers into a unified EPG. Claim 1 of the ’026 Patent is directed to an Internet-connected digital device that uses a hierarchically arranged electronic program guide (EPG) that:

*enable[s] a subscriber using the Internet-connected digital device to navigate in a drill-down manner through titles by category information in order to locate a particular one of the titles whose associated video content is desired for viewing on the Internet-connected digital device using the same category information as was designated by a video content provider in metadata associated with the video content . . .*

*wherein the navigating through titles in a drill-down manner comprises navigating from a first level of the hierarchical structure of the video-on-demand content menu to a second level of the hierarchical structure to locate the particular one of the titles . . .*

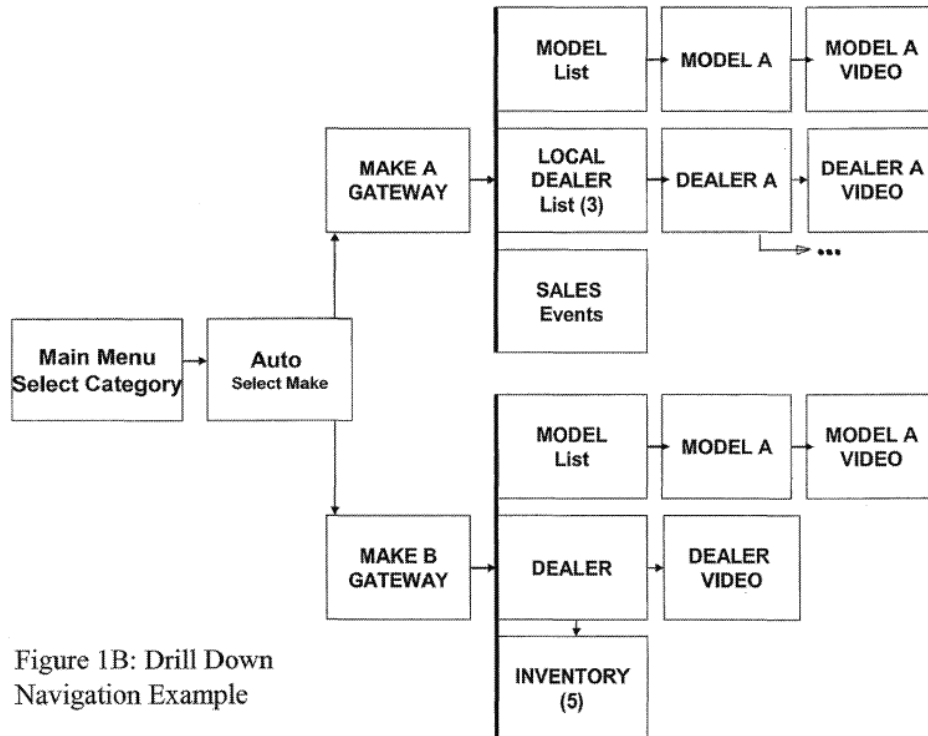
’026 Patent, claim 1

1046. This feature and its variants as claimed in other Asserted Patents will generally be

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referred to herein as “Drill Down Navigation” of an EPG. “Through the Gateway, the VOD Application leaves the Menu mode and enters the Drill Down Navigation mode for successively displays of hierarchically-ordered video content which allow the viewer to navigate to progressively more focused content.” ’026 Patent, 6:34-38.

1047. Fig. 1B of the ’026 Patent is reproduced below:



1048. The figure illustrates Drill Down Navigation in the context of advertisements for cars, and 3:58-61 describes how the hierarchical levels of the Drill Down Navigation paths (e.g., Make, Model, Dealer, etc.) correspond to categories provided by content producers in metadata. This approach allows a content producer to pierce the veil of a closed digital television system and not only (1) upload video content and metadata via a web interface, but also (2) facilitate the traversal of an EPG in an orderly manner by enabling drill down navigation of producer-provided categories and subcategories to locate a title of interest. The ’026 Patent enabled the large-scale expansion of VOD content without placing a proportional burden on the service provider, whereas

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traditional VOD systems would not be able to handle such growth, nor provide a novel approach to locating desired content among the vast number of new programs.

1049. Claim 1 of the '026 Patent further provides for template-driven displays used in connection with Drill Down Navigation of the EPG, reciting in relevant part:

*the Internet-connected digital device being configured to obtain and present to the subscriber an electronic program guide as a templated video-on-demand display, which uses at least one of a plurality of different display templates to which the Internet-connected digital device has access ...*

*wherein the templated video-on-demand display has been generated in a plurality of layers, comprising:*

*(a) a first layer comprising a background screen to provide at least one of a basic color, logo, or graphical theme to display;*

*(b) a second layer comprising a particular display template from the plurality of different display templates layered on the background screen, wherein the particular display template comprises one or more reserved areas that are reserved for displaying content provided by a different layer of the plurality of layers; and*

*c) a third layer comprising reserved area content generated using the received video content, the associated metadata, and the associated plurality of images to be displayed in the one or more reserved areas in the particular display template as at least one of text, an image, a navigation link, and a button, . . .*

*wherein a first template of the plurality of different display templates is used as the particular display template for the templated display for displaying the first level of the hierarchical structure and wherein a second template of the plurality of different display templates is used as the particular display template for the templated display for displaying the second level of the hierarchical structure ....*

1050. This template structure and its variants as claimed in other Asserted Patents will generally be referred to herein as a “Templated EPG Display.” The claim thus addresses two enabling aspects of the Templated EPG Display, including (1) how a templated display is structured using at least three different layers, as well as information uploaded to the WBCMS, and (2) how different display templates may be used across the hierarchical structure of the EPG.

1051. As mentioned above, enabling Internet upload of video content and metadata to



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closed VOD systems to accommodate increased numbers of content producers and content requires innovative solutions to improve the navigation experience for subscribers. The Templatized EPG Display standardizes the display of information uploaded to the WBCMS, such as titles and cover art, at different levels of the Drill Down hierarchy. The use of templates further minimizes the burden on the digital TV service provider to accommodate the increase in the amount of content made available on-demand, while ensuring that subscribers are not forced to scroll through endless and unformatted lists of content, as well as enabling real-time database queries.

1052. At 7:18-30, the '026 Patent describes an embodiment using the Templatized EPG Display having distinct layers, which is also shown in Fig. 1C:

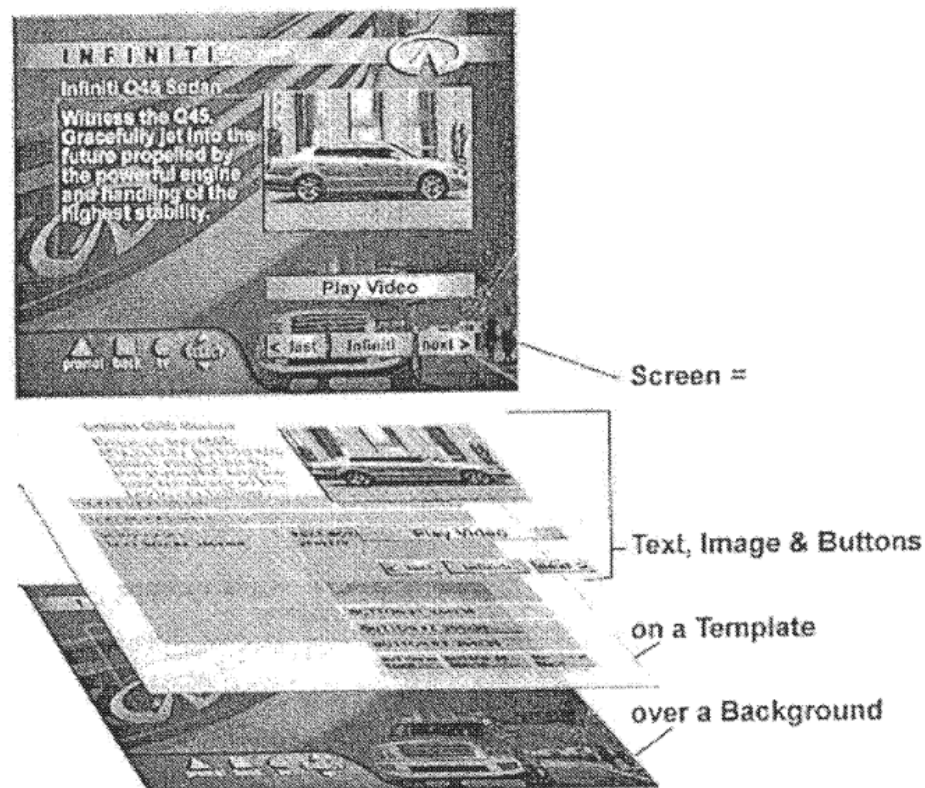


Figure 1C: Template Layer Model

1053. Fig 1C is described as follows at 7:1-30:

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*In Fig. 1C, an example illustrates how a templated VOD display is generated in layers. A Background screen provides a basic color, logo, or graphical theme to the display. A selected Template (display frame) appropriate to the navigation level the intended display resides on is layered on the Background. The Template typically has a frame in which defined areas are reserved for text, display image(s), and navigation links (buttons). Finally, the desired content constituted by associated Text, Image & Buttons is retrieved from the database and layered on the Template. The resulting screen display shows the combined background logo or theme, navigation frame, and text, video images, and buttons.*

1054. At 6:9-20, the '026 Patent describes how the Templated EPG Display may be used at one or more levels of the Drill Down hierarchy of the EPG:

*In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server 10 retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a "drill down navigation" method to find specific end content of interest.*

1055. A template need only be created once for it to be replicated across an EPG's hierarchy, leading to a significant reduction in burden and overhead for a service provider. Referring back to Fig. 1B, the Model list for Make A and Make B could adopt the same display template even if the video content had been uploaded by different content producers.

1056. The WBCMS ingests content and metadata in a new way to improve traditional VOD delivery. Further, the WBCMS in combination with Drill Down Navigation provides an end-to-end solution to bridge the gap between content producers on the open Internet and the closed digital TV service provider platform. Specifically, uploaded video content is presented in a way that makes it easy for subscribers to locate titles of interest without requiring undue effort on the part of the TV service provider to format and organize listings of content for display. In addition, the Drill Down Navigation improvement is tied to other improvements to the overall VOD architecture enabling widespread ingest without requiring a proportional amount of effort by

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the digital TV service provider. Also, because metadata is furnished by content providers themselves, the content providers have control over the locations (screens) on which their content is listed.

1057. Claim 6 of the '026 Patent further provides for the use of topic categories across multiple content providers. Claim 7 of the '026 Patent provides for a hierarchical organization of parts of the EPG as specified by a content provider.

1058. Claim 1 of the '750 Patent is directed to a particular VOD application server system that operates in a WBCMS environment. Claim 1 recites receiving application readable metadata that was uploaded via the Internet to a WBCMS, including the category and subcategory information used for the placement of the content in a hierarchical menu using a one of a plurality of different display templates. '750 Patent claim 7 is directed toward the use of topics for categories across multiple content providers. '750 Patent claim 8 provides for using a particular templated arrangement that comprises areas for display of metadata from the content provider and a background area.

1059. As with the claims of the '750 Patent, claim 1 of the '751 Patent is directed to a particular VOD application server system that operates in a WBCMS environment. In addition to receiving application readable metadata that was uploaded via the Internet to a WBCMS, including the category and subcategory information used for the placement of the content in a hierarchical menu using a one of a plurality of different display templates, claim 1 of the '751 Patent also recites receiving time information metadata for availability of the video content for scheduling. When viewed as a whole, '751 claim 1 relieves the service provider of the burden of having to manually add, remove and restructure content based on time availability, and instead provides a framework in which the content provider can directly provide via the Internet information

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necessary to make relevant determinations about content availability. ’751 Patent claim 3 is directed to using at least some different templates for different hierarchical levels. ’751 Patent claim 8 provides for using a particular templated arrangement that comprises areas for display of metadata from the content provider and a background.

1060. Claim 1 of the ’388 Patent is directed to a set-top box that operates in a WBCMS environment. Claim 1 includes references to Drill Down Navigation and Templated EPG Displays, although the references are not as detailed as in claim 1 of the ’026 Patent. Claim 13 provides more specificity as to the Templated EPG Display solution, akin to claim 1 of the ’026 Patent. Claim 17 provides a search interface within the VOD content mu that allows searches based on specified characteristics.

1061. I note that during prosecution of the ’750, ’751, ’388, and ’026 Patents, the Patent Office considered patent eligibility under Section 101 and found that each of these patents are directed to eligible subject matter under Alice Step 1 in the notice of allowability:

- ’026 Patent: “Furthermore, claim 1 recites an apparatus claim for providing a VOD delivery system which services multiple users. Thus, the claim is directed to a process, which is one of the statutory categories of invention.” BBITV-AMZN\_0001305-6
- ’750 Patent: “Furthermore, claim 1 recites an apparatus claim for providing a VOD delivery system which services multiple users. Thus, the claim is directed to a process, which is one of the statutory categories of invention.” BBITV-AMZN\_0000096-7
- ’751 Patent: “Furthermore, claim 1 recites an apparatus claim for providing a VOD delivery system which services multiple users. Thus, the claim is directed to a process, which is one of the statutory categories of invention.” BBITV AMZN\_0000346
- ’388 Patent: “Furthermore, claim 1 recites an apparatus claim for providing a VOD

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(BBITV-AMZN\_0003127-8).

1074. In ¶ 2453, Mr. Williams argues that the patents-in-suit only disclose that the “functional results of the asserted claims may be accomplished by using conventional computer components” and “do not describe either new technology or improvements to existing technologies.” For the reasons stated above, I disagree that uploading VOD content and metadata over the Internet to a WBCMS was conventional. In addition, the claims specify an end-to-end solution for content providers to upload VOD content and metadata over the Internet where the metadata is used to determine how the EPG organizes the VOD content, among other things. As described above, the asserted claims as ordered combinations provide specific improvements to VOD and EPG technology that are unconventional and inventive.

1075. As further evidence that the Asserted Claims were not well-understood, routine and conventional, I note that Mr. Williams has not located any reference that anticipates any Asserted Claim. An invention cannot be well-understood, routine and conventional if it was actually unknown.

1076. In ¶ 2454, Mr. Williams says that his opinion regarding the patent eligibility of the ’026 Patent, the ’750 Patent, the ’751 Patent, and the ’388 Patent is bolstered because of the decision in *Broadband iTV, Inc. v. Oceanic Time Warner Cable, LLC*, 135 F.Supp. 3d 1175, 1186 (D. Haw. 2015) finding different claims patent-ineligible. Mr. Williams provides no substantive analysis why the decision in that case should apply here. Hawaiian Telecom involved different claims of a different patent (the ’336 Patent). While the concept of Web-based content management is common to the ’336 claims and the Asserted Claims, the Asserted Claims also incorporate other aspects which, together with the WBCMS, provide specific improvements to technology, as described above. Therefore, it is improper for Mr. Williams to analogize *Hawaiian*

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logs on, using multiple content-specific databases to determine the relevance of said categories from the past consumption of VOD programs by the viewer. See also ’825 Patent, Notice of Allowability (BBITV-AMZN\_0000711-3 at 712). The ’825 patent improves on prior VOD personalization and does not merely present generic recitations of technology around an abstract idea.

1095. The claimed method presents improvements withing a digital TV service provider system that provide for better dynamic adjustments of an electronic programming guide for navigating by a viewer. The independent claim uses inputs from multiple databases containing different inputs to determine an order for relevance for VOD categories and reordering those categories for navigation of an EPG “at the start of each new session when said respective viewer logs onto their respective viewer-individualized electronic program guide.”

1096. When the claims are viewed as ordered combinations, they disclose an arrangement that is not a well-understood, routine, and conventional method. Rather it is an unconventional method performed by a digital TV services provider system that tracks the consumption of VOD content, determines of the relevance of categories based in part on the consumption of VOD programs stored in a usage history database, and the reordering of the categories for VOD programs in the EPG “at the start of each new session when said respective individual viewer logs on[]”. The reordering at the start of a new session when a user logs in, permits improved dynamic adjustments to the EPG displays listing the categories and thus improved personalization. As the Baumgartner reference cited by Mr. Williams discloses, a list of categories may be created using many different approaches, including for example only at predetermined intervals. Williams ¶ 2341, Baumgartner, [0171]. Using databases as part of the digital TV services provider system to store usage history rather than individual files for individual users on a set-top box improves

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functionality. Using separate databases to store usage history and electronic program guide database allows easier updating and separation of relevant information. Reordering of categories is a particular type of personalization. More specifically, reordering categories based on consumption of VOD programs rather than consumption of channels permits more granular personalization. Whereas a channel may present multiple types of content (e.g., both movies and TV shows having different genres), a particular piece of content more specifically reflects preferences.

1097. Claim 10 of the ’825 Patent presents a further combination that was not well-understood, routine, and conventional in the context of VOD systems. Claim 10 is drawn to an improved log-in step in the context of the personalized EPG by selecting among previously registered viewers. See discussion re Alice Step 1, beginning at ¶ 1085. See also my discussion of the prior art in section VI.L (“ANALYSIS OF THE ’825 PATENT”), above.

1098. Dependent claim 15 of the ’825 Patent recites “automatically generating an additional category or subcategory based on the log of said respective individual viewer’s consumption of the video-on-demand programs maintained in the usage history database.” This combination was not well understood, routine, and conventional in the context of VOD systems. See discussion re Alice Step 1, beginning at ¶ 1085. See also my discussion of prior art in Section VI.L, above.

1099. Claim 17 of the ’825 Patent references the use of a third databases, the “user profile database” to determine an order of relevance and to create a personalized EPG. Unlike the usage history database, the user profile database stores information that describes the user, such as their age or demographic, rather than their viewing habits per se. This combination of three databases that track different information relevant to determine the order of categories of VOD programs is



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the function of a VOD system. I disagree with Mr. Williams opinions in ¶ 2467 and ¶ 2468 that “using these conventional components in the way claimed in the ’825 patent was conventional knowledge in 2007 or that “for each of the key functions, the Asserted ’825 Claims only call for using known technologies in conventional ways.” Notably, despite the obvious advantages of the invention of the ’825 patent and the existence of VOD provider systems in 2007, Mr. Williams has not contended that any VOD provider systems actually used this technology in 2007. Mr. Williams has not identified any actual VOD provider systems that allegedly practiced this invention in 2007. Mr. Williams offers no reason why VOD services providers in 2007 would not have used this technology at that time if the claimed method had been well-understood, routine and conventional in 2007. See my discussion of prior art, in Sections VI.G, VI.L and VI.M, above. Moreover, Mr. Williams’ analysis is deficient, because his opinion that the Asserted ’825 Claims are drawn to an abstract idea does not contain any discussion of the elements of the asserted dependent claims. See my discussion of Alice Step 1 beginning at Section VI.N.3.

1104. I disagree with Mr. Williams’ opinion in ¶ 2469 and incorporate by reference my discussion of Alice Step 2, above, and my discussion of the alleged prior art to the ’825 patent, above. In the claimed combination, the elements of the asserted claims of the ’825 patent are novel and add significant inventive concepts over the prior art whereby (1) there is an a determination of the order of relevance of categories of content that is independent of the reordering of the EPG at the start of each new session when a viewer logs on, (2) using separate electronic program guide data databases, usage history databases and user profile databases, (3) the determination is of the order of relevance of categories – not content – based on the consumption of VOD programs, and where (4) digital TV services provider system maintains the EPG data and usage history databases.

1105. With regard to ¶¶ 2470-2471, I disagree with Mr. Williams’ opinion that it is proper



# EXHIBIT B



## UNITED STATES PATENT AND TRADEMARK OFFICE

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 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

1912 7590 09/11/2019  
 AMSTER, ROTHSTEIN & EBENSTEIN LLP  
 90 PARK AVENUE  
 NEW YORK, NY 10016

EXAMINER

ALAM, MUSHFIKH I

ART UNIT

PAPER NUMBER

2426

DATE MAILED: 09/11/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/381,645	04/11/2019	Milton Diaz Perez	BBITV-P1-D27 (07612/98)	1761

TITLE OF INVENTION: VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	12/11/2019

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

## HOW TO REPLY TO THIS NOTICE:

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If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

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For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at [www.uspto.gov/PatentMaintenanceFees](http://www.uspto.gov/PatentMaintenanceFees).**

Application/Control Number: 16/381,645  
Art Unit: 2426

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the selected first title for display on the television equipment of the television service subscriber in response to the respective television service subscriber selecting, via a television control unit in communication with the respective set top box, the respective title associated with the video content from the hierarchically-arranged category information and subcategory information of the video-on-demand content menu;

(f) causing, by the video-on-demand application server system, to be transmitted to the respective set top box from a video server, the selected first video content for display on the respective TV equipment.

The prior art do not disclose or render obvious the amended features.

Furthermore, claim 1 recites an apparatus claim for providing a VOD delivery system which services multiple users. Thus, the claim is directed to a process, which is one of the statutory categories of invention.

Next, the claim recites the content provider, web-based content management server. The network also receives uploaded content with metadata associated to the content for service to users in a VOD demand platform. Users will select content, from the VOD server, which will be played back from a tuner on the user equipment. The data will be organized with categories and subcategories in a hierarchical structure to solve the problem of a user having to sift through thousands of titles in order to find a program of interest. The claim does not recite a basic concept that is similar to any abstract idea previously identified by the courts. For example, the claim does not recite any mathematical concept, a mental process such as comparing or categorizing information that can be performed in the human mind, or by a human using a pen and paper. Accordingly, the claim does not set forth or describe an abstract idea. Instead,

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Page 6

the claimed method is necessarily rooted in video streaming technology to overcome a problem specifically arising in Video On Demand services that host large amounts of content.

Claim 2-10 are allowable as being dependent from allowable independent claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 7917933 B2	Thomas; William L. et al.
US 7367043 B2	Dudkiewicz; Gil Gavriel et al.
US 20020104099 A1	Novak, Robert Eustace
US 7444402 B2	Rennels; Ernest B.
US 20020088010 A1	Dudkiewicz, Gil Gavriel et al.
US 20020059621 A1	Thomas, William L. et al.
US 20020194194 A1	Fenton, Nicholas W. et al.
US 20040103120 A1	Fickle, Richard C. et al.

# EXHIBIT C



## UNITED STATES PATENT AND TRADEMARK OFFICE

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1912 7590 09/10/2019  
 AMSTER, ROTHSTEIN & EBENSTEIN LLP  
 90 PARK AVENUE  
 NEW YORK, NY 10016

EXAMINER

ALAM, MUSHFIKH I

ART UNIT

PAPER NUMBER

2426

DATE MAILED: 09/10/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/412,580	05/15/2019	Milton Diaz Perez	BBITV-P1-D28 (07612/99)	6262

TITLE OF INVENTION: VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICE SUBSCRIBERS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	12/10/2019

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

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III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

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Application/Control Number: 16/412,580  
Art Unit: 2426

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the hierarchically-arranged category information and subcategory information of the video-on-demand content menu;

(f) causing, by the video-on-demand application server system, to be transmitted to the respective set top box from a video server, the selected first video content for display on the respective TV equipment.

The prior art do not disclose or render obvious the amended features.

Furthermore, claim 1 recites an apparatus claim for providing a VOD delivery system which services multiple users. Thus, the claim is directed to a process, which is one of the statutory categories of invention.

Next, the claim recites the content provider, web-based content management server. The network also receives uploaded content with metadata associated to the content for service to users in a VOD demand platform. Users will select content, from the VOD server, which will be played back from a tuner on the user equipment. The data will be organized with categories and subcategories in a hierarchical structure to solve the problem of a user having to sift through thousands of titles in order to find a program of interest. The claim does not recite a basic concept that is similar to any abstract idea previously identified by the courts. For example, the claim does not recite any mathematical concept, a mental process such as comparing or categorizing information that can be performed in the human mind, or by a human using a pen and paper. Accordingly, the claim does not set forth or describe an abstract idea. Instead, the claimed method is necessarily rooted in video streaming technology to overcome a problem specifically arising in Video On Demand services that host large amounts of content.

# EXHIBIT D



<b>Supplemental Notice of Allowability</b>	<b>Application No.</b> 15/192,598	<b>Applicant(s)</b> PEREZ, MILTON DIAZ	
	<b>Examiner</b> MUSHFIKH ALAM	<b>Art Unit</b> 2426	<b>AIA (First Inventor to File) Status</b> No

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/13/2018.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-17. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a) ☐ All    b) ☐ Some    \*c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has **THREE MONTHS FROM THE "MAILING DATE"** of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.  
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____ 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material 4. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>6/21/2018</u> .	5. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 7. <input type="checkbox"/> Other _____.
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Application/Control Number: 15/192,598  
Art Unit: 2426

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wherein the received video content was uploaded to a Web-based content management system by a content provider device associated with the video content provider via the Internet in a digital video format, along with associated metadata including title information and category information, and along with an associated plurality of images designated by the video content provider, the associated metadata specifying a respective hierarchical location of a respective title of the video content within the electronic program guide to be displayed on the Internet-connected digital device using the respective hierarchically-arranged category information associated with the respective title,

wherein at least one of the uploaded associated plurality of images designated by the video content provider is displayed with the associated respective title in the templated video-on-demand display.

The prior art do not disclose or render obvious the amended features.

Furthermore, claim 1 recites a method claim for providing a VOD delivery platform which services multiple users. Thus, the claim is directed to a process, which is one of the statutory categories of invention.

Next, the claim recites the VOD content provider, web-based content management server. The network also receives uploaded content with metadata associated to the content for service to users in a VOD demand platform. Users will select content, from the VOD server, which will be played back from a tuner on the user equipment. The data will be organized with categories and subcategories in a hierarchical structure to solve the problem of a user having to sift through thousands of

Application/Control Number: 15/192,598

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Art Unit: 2426

titles in order to find a program of interest. The claim does not recite a basic concept that is similar to any abstract idea previously identified by the courts. For example, the claim does not recite any mathematical concept, a mental process such as comparing or categorizing information that can be performed in the human mind, or by a human using a pen and paper. Accordingly, the claim does not set forth or describe an abstract idea. Instead, the claimed method is necessarily rooted in video streaming technology to overcome a problem specifically arising in Video On Demand services that host large amounts of content.

Claim 2-17 are allowable as being dependent from allowable independent claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Inquiries***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MUSHFIKH ALAM whose telephone number is (571)270-1710. The examiner can normally be reached on Mon-Fri: 8:30-18:00 EST.

# EXHIBIT E



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
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## NOTICE OF ALLOWANCE AND FEE(S) DUE

1912 7590 01/04/2017  
 AMSTER, ROTHSTEIN & EBENSTEIN LLP  
 90 PARK AVENUE  
 NEW YORK, NY 10016

EXAMINER

ALAM, MUSHFIKH I

ART UNIT

PAPER NUMBER

2426

DATE MAILED: 01/04/2017

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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15/253,321

08/31/2016

Milton Diaz Perez

BBITV-P1-D13 (07612/62)

2199

TITLE OF INVENTION: VIDEO-ON-DEMAND CONTENT DELIVERY SYSTEM FOR PROVIDING VIDEO-ON-DEMAND SERVICES TO TV SERVICES SUBSCRIBERS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	04/04/2017

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

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III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

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Art Unit: 2426

Page 4

**designated by the respective video content provider in the respective specified metadata for the respective video content, wherein a plurality of different video display templates are accessible to the set-top box, and wherein the video-on-demand content menu is generated using at least one of the plurality of different video display templates and based at least upon the respective specified metadata; and**

**(c) in response to the TV service subscriber selecting, via a control unit in communication with the set-top box, a first respective title associated with a first video content from the hierarchical structure of respective category information and subcategory information of the video-on-demand content menu using drill-down navigation, transmitting the selection to the set-top box for display on the TV equipment; and**

**(d) receiving, at the set-top box, the first video content for display on the TV equipment of the TV service subscriber, wherein in response to the selection the first video content was retrieved from a video server associated with the video-on-demand content delivery system.**

The prior art do not disclose or render obvious the amended features.

Furthermore, claim 1 recites an apparatus claim for providing a VOD delivery system which services multiple users. Thus, the claim is directed to a process, which is one of the statutory categories of invention.

Next, the claim recites the content provider, web-based content management server. The network also receives uploaded content with metadata associated to the

Application/Control Number: 15/253,321

Page 5

Art Unit: 2426

content for service to users in a VOD demand platform. Users will select content, from the VOD server, which will be played back from a tuner on the user equipment. The data will be organized with categories and subcategories in a hierarchical structure to solve the problem of a user having to sift through thousands of titles in order to find a program of interest. The claim does not recite a basic concept that is similar to any abstract idea previously identified by the courts. For example, the claim does not recite any mathematical concept, a mental process such as comparing or categorizing information that can be performed in the human mind, or by a human using a pen and paper. Accordingly, the claim does not set forth or describe an abstract idea. Instead, the claimed method is necessarily rooted in video streaming technology to overcome a problem specifically arising in Video On Demand services that host large amounts of content.

Claim 2-19 are allowable as being dependent from allowable independent claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

# EXHIBIT F



	: Atty. Dkt.: BBiTV-P1
In Re U.S. Patent Application Of:	: Examiner: Alam, Mushfikh I
M. DIAZ PEREZ	: Group No.: 2623
Serial No.: 10/909,192	:
Filed: July 30, 2004	:
Title: SYSTEM ... FOR ... CONVERTING ... VIDEO CONTENT ON A VOD PLATFORM ...	:

Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

1. I am the inventor and applicant in the above-identified U.S. Patent Application 10/909,192, filed on July 30, 2004. I submit this Affidavit in support of the patentability of the claims pending before the Examiner in this case.

2. I received my Bachelor of Science degree in Electrical Engineering, with concentration in Communication and Information Theory, from the Columbia School of Engineering and Applied Science, and Bachelor of Arts degree from Columbia College, Columbia University, New York, NY. Prior to joining Broadband iTV, Inc., Honolulu, Hawaii, ("BBITV") the Assignee of the present Application, I was employed for over 20 years in software, hardware and product development, hardware manufacturing, technology infrastructure and field operations and engineering organization development, with a proven record in the design, development and delivery of next-generation software and hardware products. My two principle areas of expertise are the design, development and operation of Interactive Television and Video-on-Demand systems for the Lodging and Cable TV industries, and the development and management of large-scale Internet web sites. I have been designing

Interactive Television systems since 1991. At BBITV, I was employed as Chief Technology Officer to design and develop a new system for uploading video content from the internet for viewing in the cable TV network environment, and consequently developed a prototype system described in the present Application filed in July 2004, which was developed and tested by BBITV for Oceanic Cable TV, Honolulu, Hawaii, a Time Warner affiliate.

3. In my background and experience in the industry to July 2004, no prior system had been developed for uploading of video content via internet for viewing in a cable TV system in a non-linear format using drill-down navigation. Internet-TV websites existed but were entirely different from the cable TV ("CATV") environment, and there was no crossover of content or business between them to my knowledge. Each was a separate type of content domain at the time of my invention, and I submit that it was not obvious from what was known in either the fledgling internet-TV entries or the cable TV industry at that time to provide a method for uploading video content via the open internet into the cable TV's closed content environment for viewing on TV equipment using input from TV remote controls to set-top boxes. Because of the difference in video content origin, types and numbers of video content and audiences addressed, these two industries remained entirely separate and distinct from one another.

4. As evidence of the differences that existed between these two industries at the time of my filing of the present Application in July 2004, I submit the following as evidence:

(a) Wikipedia article on "Cable television in the United States", (Exhibit A) highlighted (in yellow line) in particular as noting that in 1958 the FCC decided that CATV was not a common carrier since the subscriber did not determine the programming, and that in digital cable systems the set-top converter box is programmed remotely to allow or disallow access to cable TV channels on an individual basis.

(b) Wikipedia article on "Internet television", (Exhibit B) in particular noting that Internet TV differs from IPTV (Internet Protocol Television) and other discrete service provider networks (such as CATV) which are highly managed to provide guaranteed quality of service and bandwidth and usually requiring a special set-top box.

(c) Wikipedia article on "Content delivery network" or "Content distribution network" (Exhibit C) in particular noting that these are a system of computers networked together across the internet that cooperate transparently to deliver content to end users.

(d) Wikipedia article on "Walled garden", (Exhibit D) in particular noting that

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,	§	
	§	
	§	
Plaintiff,	§	
	§	Case No. 6:20-cv-00921-ADA
v.	§	
	§	
AMAZON.COM, INC. AMAZON.COM	§	
SERVICES LLC and AMAZON WEB	§	
SERVICES, INC.,	§	
	§	
Defendants.	§	

---

**[PROPOSED] JOINT PRETRIAL ORDER**

Pursuant to the Court’s Scheduling Order (Dkt. 37), and consistent with the Local Rules and this Court’s Standing Order on Pre-Trial Procedures and Requirements in Civil Case, Plaintiff Broadband iTV, Inc. (“BBiTV”) and Defendants Amazon.com, Inc., Amazon.com Services LLC and Amazon Web Services, Inc. (“Amazon”) submit this Joint Final Pretrial Order in advance of the Pretrial Conference.<sup>1</sup>

It is hereby ORDERED as follows:

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<sup>1</sup> Plaintiff’s proposed language is denoted in **[RED]** and Defendants’ proposed language is denoted in **[BLUE]**, according to the Court’s Standing Order on Pre-Trial Procedures and Requirements in Civil Cases.

New York, NY 10010  
Telephone: (212) 430-2600  
Facsimile: (650) 938-5200

G. Blake Thompson  
blake@themannfirm.com  
J. Mark Mann  
mark@themannfirm.com  
**MANN TINDEL THOMPSON**  
201 E. Howard Street  
Henderson, TX 75654  
Telephone: (903) 657-8540  
Facsimile (903) 657-6003

## **II. STATEMENT OF JURISDICTION:**

This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. § 1 *et. seq.* The parties do not contest jurisdiction or venue with respect to BBiTV's infringement claims and Amazon's defenses thereto.

## **III. JOINT STATEMENT OF THE CASE:**

This is a civil action for patent infringement in which BBiTV accuses Amazon of infringing

- Claims 1, 13 and 17 of U.S. Patent No. 9,648,388 ("388 Patent");
- Claims 1, 6 and 7 of U.S. Patent No. 10,028,026 ("026 Patent");
- Claims 1, 7 and 8 of U.S. Patent No. 10,536,750 ("750 Patent");
- Claims 1, 3 and 8 of U.S. Patent No. 10,536,751 ("751 Patent); and
- Claims 1, 10, 15 and 17 of U.S. Patent No. 9,973,825 ("825 Patent") (collectively the "Asserted Claims" of the "Asserted Patents").<sup>2</sup>

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<sup>2</sup> **Amazon:** BBiTV should immediately reduce these claims to a reasonable number for trial. Amazon does not, by inclusion in these joint instructions, admit that it is reasonable to try sixteen claims to the jury. BBiTV has declined to engage in further discussions to narrow its asserted claims and Amazon's prior art references. Failing to reduce its number of asserted claims in a timely manner will substantially prejudice Amazon's trial preparations.

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION

BROADBAND iTV

\*

\* August 30, 2022

VS.

\*

\* CIVIL ACTION NO. W-20-CV-921

AMAZON.COM, INC.

\*

BEFORE THE HONORABLE ALAN D ALBRIGHT  
PRETRIAL CONFERENCE

APPEARANCES:

For the Plaintiff: Robert F. Kramer, Esq.  
David Alberti, Esq.  
Jeremiah A. Armstrong, Esq.  
Marc Belloli, Esq.  
Margaret Elizabeth Day, Esq.  
Sal Lim, Esq.  
Hong Lin, Esq.  
Sven Raz, Esq.  
Feinberg Day Kramer Alberti Lim  
Tonkovich & Beloli  
577 Airport Blvd., Suite 250  
Burlingame, CA 94010

Andrea L. Fair, Esq.  
Jack Wesley Hill, Esq.  
Ward Smith & Hill, PLLC  
1507 Bill Owens Pkwy  
Longview, TX 75604

For the Defendant: Todd R. Gregorian, Esq.  
Gregory Michael Sefian, Esq.  
Min Wu, Esq.  
Eric B. Young, Esq.  
Fenwick & West LLP  
555 California Street  
San Francisco, CA 94104

J. David Hadden, Esq.  
Ravi Ranganath, Esq.  
Saina S. Shamilov, Esq.  
Allen Wang, Esq.  
Fenwick & West LLP  
801 California Street  
Mountain Valley, CA 94041

1 Geoffrey R. Miller, Esq.  
2 Fenwick & West LLP  
3 902 Broadway, Suite 14  
4 New York, NY 10010

5 Jeffrey Ware, Esq.  
6 Fenwick & West LLP  
7 1191 Second Avenue, 10th Floor  
8 Seattle, WA 98101

9 J. Mark Mann, Esq.  
10 Mann Tindel Thompson  
11 300 W. Main St.  
12 Henderson, TX 75652

13 Court Reporter: Kristie M. Davis, CRR, RMR  
14 PO Box 20994  
15 Waco, Texas 76702-0994  
16 (254) 340-6114

17 Proceedings recorded by mechanical stenography,  
18 transcript produced by computer-aided transcription.  
19  
20  
21  
22  
23  
24  
25

01:44 1 I have some slides I would like to put on the screen  
01:44 2 that will help us walk through this.

01:45 3 So, Your Honor, there are three questions  
01:45 4 to be decided. The first is whether the asserted  
01:45 5 claims of each of the five patents are directed to  
01:45 6 specific technological improvements to two areas of  
01:45 7 technology, two related areas, video-on-demand and  
01:45 8 electronic program guide technology.

01:45 9 Your Honor, can you see my screen before  
01:45 10 I continue?

01:45 11 (Thumbs up by the Court.)

01:45 12 THE COURT: Yes I can.

01:45 13 MR. KRAMER: Okay. Thank you. I wasn't  
01:45 14 sure if it was okay.

01:45 15 So -- or whether those are abstract.

01:45 16 The second issue, of course, is whether  
01:45 17 the asserted claims disclose an inventive concept,  
01:45 18 improving on existing -- then existing technologies,  
01:45 19 video-on-demand and electronic program guide  
01:46 20 technology, satisfying the Alice Step 2. And then the  
01:46 21 collateral estoppel issue which counsel just referred  
01:46 22 to.

01:46 23 So just to orient us, we have four  
01:46 24 patents having the 2004 priority date. Two of them  
01:46 25 directed to a specialized set-top box that's a piece of



02:23 1 And the invention here in the Core  
02:23 2 Wireless case was showing how the user could scroll  
02:23 3 around, switch views and be able to use that interface,  
02:23 4 that graphic interface more effectively.

02:23 5 Federal Circuit said, that is making an  
02:23 6 improvement to a technology. Therefore it meets the  
02:23 7 101 test because it's a specific technological  
02:23 8 improvement to an existing technology.

02:23 9 You know, this shows more language from  
02:23 10 that Federal Circuit case, which is showing that known  
02:23 11 concepts were being used. The idea setting up, you  
02:23 12 know, different little, you know, levels here for  
02:24 13 someone to look at and to be able to click through  
02:24 14 weren't new materials themselves. They were existing.  
02:24 15 But they were configured in a way like the BBi  
02:24 16 technology patents that produced an unconventional  
02:24 17 improvement over the prior art electronic program  
02:24 18 guides.

02:24 19 So in sum -- in summary, BBi's  
02:24 20 inventions, they're making specific improvements to the  
02:24 21 EPG, to the VOD technologies similar to the  
02:24 22 improvements that were made in the Core Wireless case.  
02:24 23 You know, large amount, the video-on-demand content.  
02:24 24 It has to be easy to find by viewers.

02:24 25 This inventor takes a concept, drill-down



02:24 1 navigation, through categories, subcategories by  
02:24 2 designating that information by content providers when  
02:24 3 it's ingested into the TV provider's system. Using the  
02:24 4 Internet to upload that, and then using templates to  
02:25 5 systematically display for the content provider to be  
02:25 6 able to put into the TV provider's system. And the  
02:25 7 user can in turn find that information.

02:25 8 So the Patent Office explicitly  
02:25 9 considered the 101 issue in issuing each of the four  
02:25 10 patents that relate to the overall system, the '026,  
02:25 11 the '388, the '750 and the '751.

02:25 12 I know that that Hawaiian Telcom case was  
02:25 13 in 2015. The Fed Circuit affirmance under Rule 36, no  
02:25 14 opinion, no analysis as to whether and how they even  
02:25 15 looked at that decision was in 2016. Also back in the  
02:25 16 sort of hay day, as you might say, of the confusion of  
02:25 17 the Alice decisions.

02:25 18 That was all submitted to the Patent  
02:25 19 Office when these patents, the BBi patents were applied  
02:25 20 for and later allowed in 2017, '18 and '19.

02:25 21 And what we show here is that the Patent  
02:26 22 Office actually looked at the 101 issue in each of  
02:26 23 these patents. Looked at the Hawaiian Telcom case,  
02:26 24 specifically found that the inventions here, the  
02:26 25 claimed inventions, do not set forth as the Patent

02:55 1 making of, well, having templates can't be inventive,  
02:55 2 that also runs in the face of Your Honor's decision in  
02:55 3 which the invention itself was actually having  
02:55 4 templates if they're put with other elements in a  
02:55 5 graphic user interface system.

02:55 6 That's the ESW Holdings versus Roku case,  
02:56 7 where the invention is directed to creating templates  
02:56 8 of information that a user can access, change and save.  
02:56 9 And it describes the problem associated with the prior  
02:56 10 art and the claim described in (inaudible) approach  
02:56 11 that accomplishes the specific practical and useful  
02:56 12 improvement to the processes that existed.

02:56 13 That's from Your Honor's decision in  
02:56 14 2019. And what you explain in that decision is that --  
02:56 15 is that, sure. Templates -- Mr. Diaz, the inventor, in  
02:56 16 that case, didn't invent the concept of having  
02:56 17 templates. What they invented was the use of templates  
02:56 18 along with other technological steps that improve upon  
02:56 19 some existing technology.

02:56 20 In that case it was a graphic user  
02:56 21 interface. Here, it's a different piece of complex  
02:56 22 software called an electronic program guide.

02:56 23 THE COURT: Thank you, sir.

02:56 24 MR. HADDEN: Can I respond quickly, Your  
02:56 25 Honor?

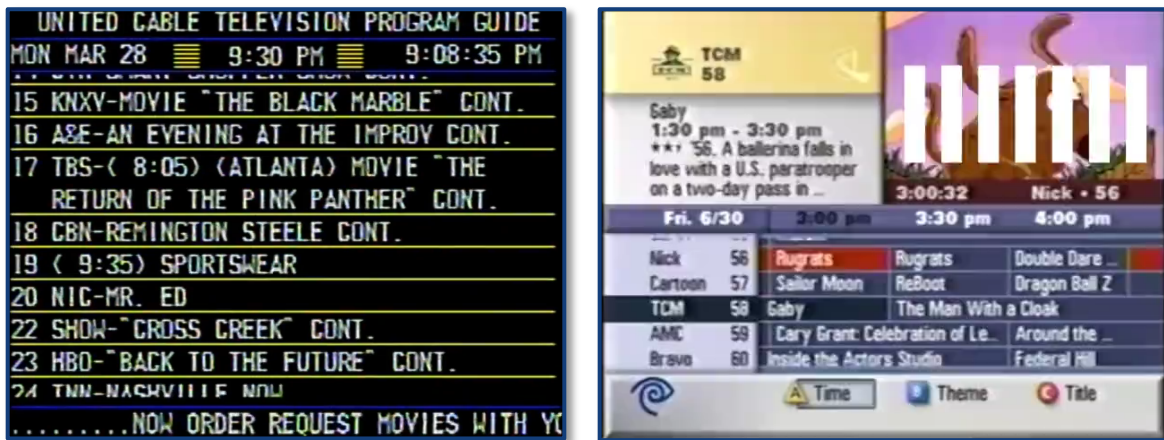
**THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,	§	
	§	
	§	
Plaintiff,	§	
	§	Case No. 6:20-cv-921-ADA
v.	§	
	§	
AMAZON.COM, INC., AMAZON.COM	§	
SERVICES, LLC, and AMAZON WEB	§	
SERVICES, INC.,	§	
	§	
Defendants.	§	

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**PLAINTIFF’S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW**

FF14. The inventor recognized that VOD and EPG technologies could also be improved by enabling large scale expansion of the underlying technology.<sup>14</sup> At the time, EPGs, which are a specialized software used in set-top boxes in connection with providing video on demand to viewers, were rudimentary and not well suited for TV providers to display rapidly growing quantities of movies and information about movies for viewers to select from. Examples of early EPGs are as follows:



The inventor recognized the problems associated with creating an effective EPG -- how VOD content (e.g., movies) and description of content (e.g., information such as title, director, actors, etc.) would be uploaded to TV providers' systems for use populating the EPG without undue labor by the TV provider, and how content and descriptive information about content would be organized and presented in an EPG in the most usable way to assist viewers to navigate the EPG software.

*Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1008 (Fed. Cir. 2018) (“The Tab Patents solved this known technological problem in computers in a particular way—by providing a highly intuitive, user-friendly interface with familiar notebook tabs for navigating the three-dimensional worksheet environment”).

<sup>14</sup> Plaintiff's Ex. A, Expert Report of M. Shamos at ¶¶ 1041, 1043-1045, 1048, 1051, 1056.

**b. The '026 Patent's Technological Improvement of a  
"Templatized EPG Display"**

FF29. Claim 1 of the '026 patent covers the feature of "Templatized EPG Display" (identified through underlining below) that is used in connection with the "Drill Down Navigation" feature:

the Internet-connected digital device being configured to obtain and present to the subscriber an electronic program guide as a templatized video-on-demand display, which uses at least one of a plurality of different display templates to which the Internet-connected digital device has access . . .

wherein the templatized video-on-demand display has been generated in a plurality of layers, comprising:

(a) a first layer comprising a background screen to provide at least one of a basic color, logo, or graphical theme to display;

(b) a second layer comprising a particular display template from the plurality of different display templates layered on the background screen, wherein the particular display template comprises one or more reserved areas that are reserved for displaying content provided by a different layer of the plurality of layers; and

(c) a third layer comprising reserved area content generated using the received video content, the associated metadata, and the associated plurality of images to be displayed in the one or more reserved areas in the particular display template as at least one of text, an image, a navigation link, and a button, . . .

wherein a first template of the plurality of different display templates is used as the particular display template for the templatized display for displaying the first level of the hierarchical structure and wherein a second template of the plurality of different display templates is used as the particular display template for the templatized display for displaying the second level of the hierarchical structure . . .<sup>29</sup>

FF30. There are enabling aspects of the Templatized EPG Display: (1) how a templatized display is composed using at least three different layers as well as information uploaded to the WBCMS, and (2) how different display templates may be used across the hierarchical structure of the EPG.<sup>30</sup> The use of Templatized EPG Display enables the content providers to upload video content and metadata describing the content into templates that in turn

<sup>29</sup> Defendants' Ex. 5, '026 patent at 22:15-20, 22:15-44, 22:50-57.

<sup>30</sup> Plaintiff's Ex. A, Expert Report of M. Shamos at ¶ 1050.

correspond to and can be used to determine specific locations in the EPG where the content and metadata description of the content will reside in the EPG. This enabled the content provider to specify and have some control over how the content and descriptive information about the content would be displayed to viewers who use the EPG. It would also reduce or minimize the labor that was at the time being employed by the video service providers to input descriptive metadata for display of that information in the EPG.

FF31. The Templatized EPG Display improves the navigation experience for subscribers: (1) by standardizing the display of information uploaded to the WBCMS, such as titles and cover art, at different levels of the Drill Down hierarchy; and (2) because the use of templates further minimizes the burden on the digital TV service provider to accommodate the increase in the amount of content made available on-demand, while ensuring that subscribers are not forced to scroll through endless and unformatted lists of content, as well as enabling real-time database queries.<sup>31</sup>

FF32. The '026 patent at col. 7:18-30 describes an embodiment using the Templatized EPG Display having distinct layers, which is also shown in FIG. 1C:

In FIG. 1C, an example illustrates how a templatized VOD display is generated in layers. A Background screen provides a basic color, logo, or graphical theme to the display. A selected Template (display frame) appropriate to the navigation level the intended display resides on is layered on the Background. The Template typically has a frame in which defined areas are reserved for text, display image(s), and navigation links (buttons). Finally, the desired content constituted by associated Text, Image & Buttons is retrieved from the database and layered on the Template. The resulting screen display shows the combined background logo or theme, navigation frame, and text, video images, and buttons.<sup>32</sup>

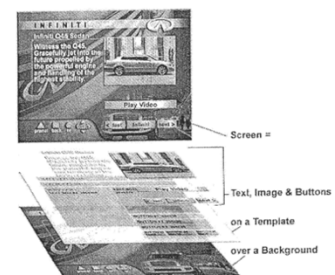


Figure 1C: Template Layer Model

<sup>31</sup> Plaintiff's Ex. A, Expert Report of M. Shamos at ¶ 1051.

<sup>32</sup> Defendants' Ex. 5, '026 patent at 7:18-30, FIG. 1C.

FF33. The '026 patent at col. 6:9-20 describes how the Templatized EPG Display may be used at one or more levels of the Drill Down hierarchy of the EPG:

In the invention, the templates are of different types ordered in a hierarchy, and display of content in a template of a higher order includes links the viewer can select to content of a lower order in the hierarchy. Upon selecting a link using the remote control, the VOD Application Server 10 retrieves the template and video content of lower order and displays it to the viewer. Each successive templated display may have further links to successively lower levels of content in the hierarchy, such that the viewer can use the series of linked templated VOD displays as a “drill down navigation” method to find specific end content of interest.<sup>33</sup>

FF34. A template need only be created once for it to be replicated across an EPG's hierarchy, leading to a significant reduction of burden and overhead for a service provider.<sup>34</sup>

**c. The Technological Improvements of the '750, '751 and '388 Patents**

FF35. The '750 and '751 patent claims are directed towards a video-on-demand application server system that works in tandem with the WBCMS in which content providers can designate titles, category, and subcategory information to influence how content is presented in an EPG. Claim 1 of both patents recites the Templatized EPG Display feature in addition to the WBCMS.<sup>35</sup>

FF36. Claim 1 of the '751 patent further requires the technological improvement of “Time Availability Metadata” to be provided to the WBCMS to allow the content providers to exert additional control over when their VOD content is to be made available.<sup>36</sup>

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<sup>33</sup> Defendants' Ex. 5, '026 patent at 6:9-20.

<sup>34</sup> Plaintiff's Ex. A, Expert Report of M. Shamos at ¶ 1055; *see also* Defendants' Ex. 5, '026 patent at 7:3-10 (describing the benefit of using templates to avoid “entirely new ads or screen displays having to be shot produced, contracted, delivered, and programmed with the cable TV company”).

<sup>35</sup> Plaintiff's Ex. A, Expert Report of M. Shamos at ¶ 1058-59; Defendants' Ex. 3, '750 patent at claim 1; Defendants' Ex. 4, '751 patent at claim 1.

<sup>36</sup> Plaintiff's Ex. A, Expert Report of M. Shamos at ¶ 1059; Defendants' Ex. 4, '751 patent at claim 1.

- FF59. Using a WBCMS and Drill Down Navigation, the location where video content is to be listed can be designated by a content provider in metadata and provided to the WBCMS via the Internet, and that same information is used to assist the user in navigating to a title of interest in a hierarchical guide.<sup>59</sup>
- FF60. Templatized VOD Displays – claimed in the '026, '750, '751, and '388 patents – are a technological improvement of the VOD architecture that enables large scale ingestion of video content and metadata without requiring a proportional amount of effort by the TV service provider.<sup>60</sup>
- FF61. A templated VOD display also enables the TV service provider to quickly replicate and/or modify existing menu screens to incorporate information provided by content providers via the Internet.<sup>61</sup>
- FF62. Time Availability Metadata – claimed in the '751 patent – is a technological improvement to VOD architecture that relieves the service provider of the burden of having to manually add, remove and restructure content based on time availability, and instead provides a framework in which the content provider can directly provide via the Internet information necessary to make relevant determinations about content availability.<sup>62</sup>
- FF63. The PTO stated in Notices of Allowance for the '026, '750, '751 and '388 patents that “the claim does not set forth or describe an abstract idea. Instead, the claimed method is necessarily rooted in video streaming technology to overcome a problem specifically arising in Video On Demand services that host large amounts of content.” (emphasis

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<sup>59</sup> Defendants' Ex. 5, '026 patent at 3:3-12, 17:47-51; Plaintiff's Ex. A at ¶¶ 1045-1048.

<sup>60</sup> Defendants' Ex. 5, '026 patent at 3:3-12, 17:47-51; Plaintiff's Ex. A at ¶¶ 1041-1043, 1056.

<sup>61</sup> Defendants' Ex. 5, '026 patent at 7:3-10; Plaintiff's Ex. A at ¶¶ 1045-1055.

<sup>62</sup> Defendants' Ex. 4, '751 patent at 16:10-14, 16:45-49; Plaintiff's Ex. A at ¶ 1059.



FF89. The patents in *Trading Techs.* are for a method and system for reducing the time it takes for a trader to place a trade when electronically trading on an exchange, thus increasing the likelihood that the trader will have orders filled at desirable prices and quantities. “The patents describe a trading system in which a graphical user interface displays the market depth of a commodity traded in a market, including a dynamic display for a plurality of bids and for a plurality of asks in the market for the commodity and a static display of prices corresponding to the plurality of bids and asks. In the patented system bid and asked prices are displayed dynamically along the static display, and the system pairs orders with the static display of prices and prevents order entry at a changed price.”<sup>89</sup>

FF90. In *Trading Techs.*, the Federal Circuit agreed that “the claims . . . require[d] a specific, structured graphical user interface paired with a prescribed functionality directly related to the graphical user interface’s structure that is addressed to and resolves a specifically identified problem in the prior state of the art.”<sup>90</sup>

FF91. The Drill Down Navigation and Templatized EPG Displays improvements to VOD/EPG technologies comprise a “specific, structured graphical user interface” that addresses specific problems associated with VOD and EPG technologies.<sup>91</sup>

FF92. The ’718 patent at issue in *ESW Holdings, Inc. v. Roku, Inc.*, No. 6:19-CV-00044-ADA, 2019 WL 10303653, at \*3 (W.D. Tex. May 13, 2019) is directed to creating templates of information that a user can access, change, and save.<sup>92</sup>

FF93. The ’718 patent is about allowing a designer to specify how the development environment

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<sup>89</sup> *Trading Techs.*, 675 F. App’x at 1003.

<sup>90</sup> *Trading Techs.*, 675 F. App’x at 1004.

<sup>91</sup> Plaintiff’s Ex. A at ¶¶ 1048, 1051, 1056.

<sup>92</sup> *ESW Holdings, Inc. v. Roku, Inc.*, No. 6:19-CV-00044-ADA, 2019 WL 10303653, at \*3 (W.D. Tex. May 13, 2019).

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,

Plaintiff,

V.

AMAZON.COM, INC., AMAZON.COM SERVICES, LLC, and AMAZON WEB SERVICES, INC.

Defendants.

§ § § § § § § § § §

Case No. 6:20-cv-921-ADA

## **PLAINTIFF BROADBAND iTV, INC.'S NOTICE OF APPEAL**

Notice is hereby given that Plaintiff Broadband iTV, Inc. (“BBiTV”) hereby appeals to the United States Court of Appeals for the Federal Circuit from the final judgment entered in this action on October 25, 2022 (Dkt. 205), from the Memorandum Opinion and Order granting summary judgment to Defendants on September 30, 2022 (Dkt. 204), and from all previous orders, rulings, findings, stipulations, and conclusions entered in this action.

Dated: October 25, 2022

Respectfully submitted,

By: */s/ Robert F. Kramer*  
**KRAMER DAY ALBERTI LIM  
TONKOVICH & BELLOLI LLP**  
Robert F. Kramer (*pro hac vice*)  
rkramer@kramerday.com  
M. Elizabeth Day (*pro hac vice*)  
eday@kramerday.com  
David Alberti (*pro hac vice*)  
dalberti@kramerday.com  
Sal Lim (*pro hac vice*)  
slim@kramerday.com  
Russell S. Tonkovich (*pro hac vice*)  
rtonkovich@kramerday.com  
Marc Belloli (*pro hac vice*)  
mbelloli@kramerday.com  
Lawrence G. McDonough (Admitted to Practice)  
lmcdonough@kramerday.com  
Hong Lin (*pro hac vice*)  
hlin@kramerday.com  
Jeremiah A. Armstrong (*pro hac vice*)  
jarmstrong@kramerday.com  
Andrew Hamill (*pro hac vice*)  
ahamill@kramerday.com  
Sven Raz (*pro hac vice*)  
sraz@kramerday.com  
Ryan Dooley (*pro hac vice*)  
rdooley@kramerday.com  
577 Airport Blvd., Suite 250  
Burlingame, California 94010  
Tel: 650-825-4300  
Fax: 650-460-8443

*Attorneys for Plaintiff*  
Broadband iTV, Inc.

**CERTIFICATE OF SERVICE**

I certify that the foregoing document is being served via the Court's CM/ECF system on October 25, 2022, on all counsel of record who have consented to electronic service.

/s/ Robert F. Kramer  
Robert F. Kramer

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,

Plaintiff,

v.

AMAZON.COM, INC., AMAZON.COM  
SERVICES LLC and AMAZON WEB  
SERVICES, INC.,

Defendants.

Case No. 6:20-cv-00921-ADA

**PUBLIC VERSION**

**BROADBAND ITV, INC.'S MOTION FOR SUMMARY JUDGMENT  
REGARDING AMAZON'S DERIVATION INVALIDITY DEFENSE**

## II. BACKGROUND

Defendants contend that Mr. Diaz Perez derived four of the five patents-in-suit from Navic, a company that provided Plaintiff services in 2003-04. Ex. A, Williams Report pgs. 698-99, ¶¶ 2475-78. Plaintiff [REDACTED] [REDACTED] as one part of Plaintiff's overall system, but it is not the complete invention. Ex. B, Shamos Report pgs. 309-10, ¶¶ 1111-12.

Defendants' derivation defense is dubious from the start because both the Navic system and a related Navic published patent application were disclosed to the Patent Office during prosecution of the patents-in-suit. Ex. B, Shamos Report ¶ 1111; Ex. C, '192 Application at [0004]. Thus, the Patent Office necessarily considered the Navic system and related Navic patent application and found that these materials did *not* evince a prior conception.

Regardless, Defendants' derivation defense fails as a matter of law because the Navic system did not have a WBCMS that allowed content providers to upload video content and metadata — functionality that is recited in each asserted patent claim. *See* claim 1 of U.S. Patent No. 9,648,388, 10,536,750, 10,536,751, and 10,028,026. Without this element, Defendants cannot establish that Mr. Diaz Perez derived his inventions from someone else.

The Navic system is, at best, merely one component in the video-on-demand ("VOD") system invented by Mr. Diaz Perez and not his complete invention. The Navic system includes a VOD application server that is located at a cable-head end in a VOD content delivery system. Ex. B, Shamos Report ¶ 1112. The Navic application server is an embodiment of a VOD application server and is depicted as item 10 in Fig. 1A of the '192 Application (the parent application from which each of the '388, '750, '751 and '026 patents descend):

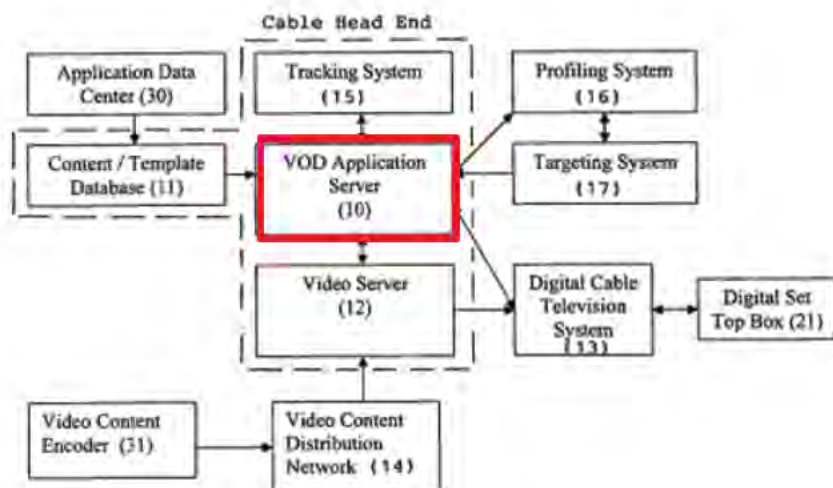


Figure 1A: VOD Content Delivery System, Overall Architecture

Ex. C, '192 Application, Fig. 1A, [00021] (“An example of such a VOD Application Server is the Navic N-Band(TM) server as previously described.”). This VOD application server is not a WBCMS that allows content providers to upload video content along with associated metadata into the overall system as required by Mr. Diaz Perez’s patents. Ex. B, Shamos Report ¶ 1113.

Moreover, the WBCMS (40) invented by Mr. Diaz Perez was a component *separate from* the VOD content delivery system where the VOD application server resides:

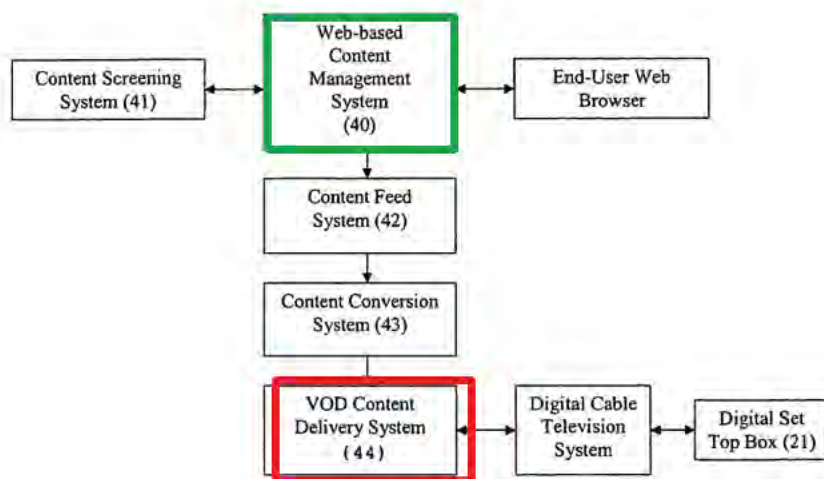


Figure 2A: Classified Ad System, Overall Architecture

See Ex. C, '192 Application, Fig. 2A. Put succinctly, Mr. Diaz Perez’s patented inventions include a WBCMS that is separate from the VOD application server component provided by Navic. Ex.

B, Shamos Report ¶ 1109.

It is undisputed that Navic was a vendor that was supposed to deliver specific platform functionality that is only part of the invention. It is also undisputed that Navic had no enabling system to communicate to Mr. Diaz Perez. In particular, while the Navic system was a platform on which Plaintiff's custom applications were to be built, the Navic system never delivered video on demand ("VOD") applications as required by BBiTV's system. Ex. D, Diaz Tr. (3-24-2022) at 71:4-16 [REDACTED]  
[REDACTED]  
[REDACTED]; Ex. L, Diaz Tr. (3-25-2022) at 179:21-22 [REDACTED]  
[REDACTED]).

### III. ARGUMENT

#### A. Summary Judgment Standard

Summary judgment is appropriate when "there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a); *see also Celotex v. Catrett*, 477 U.S. 317, 322 (1986). Here, because Defendants bear the burden of proof on a derivation defense, Plaintiff is entitled to summary judgment by demonstrating that Defendants have insufficient evidence to make a prima facie case. *Id.* at 323.

#### B. Defendants Cannot Show Complete Prior Conception by Another

To prove derivation under § 102(f), "the party asserting invalidity must prove both prior conception of the invention by another and communication of that conception to the patentee" by clear and convincing evidence. *Eaton Corp. v. Rockwell Int'l Corp.*, 323 F.3d 1332, 1344 (Fed. Cir. 2003) (citation omitted). A derivation defense requires complete prior conception by another that "encompass[es] ***all limitations of the claimed invention.***" *Cumberland Pharmaceuticals Inc. v. Mylan Institutional LLC*, 846 F.3d 1213, 1218 (Fed. Cir. 2017) (quoting *Singh v. Brake*, 317



F.3d 1334, 1340 (Fed. Cir. 2003)) (emphasis added). “The *communication must be sufficient to enable* one of ordinary skill in the art to make the patented invention.” *Eaton*, 323 F.3d at 1344 (emphasis added). Defendants’ derivation defense fails as a matter of law for the following three reasons: (1) there is no dispute between the parties’ experts that the Navic system does not have “all limitations of the claimed invention”; (2) Defendants fail to identify “another” who conceived of the invention; and (3) there is no evidence of an enabling communication of the conception of the patented invention by “another”. *Cumberland Pharmaceuticals*, 846 F.3d at 1218.

**1. The parties’ experts agree that the Navic system did not have a WBCMS that allowed content providers to upload video content and metadata as required by the asserted claims.**

There is no dispute between the parties’ experts that the Navic system that Defendants rely on for their derivation defense lacked a “web-based content management system” (“WBCMS”) for receiving uploaded video content and metadata as required by each of the asserted claims of the ’388, ’750, ’751 and ’026 patents, i.e., “wherein video content was uploaded to a Web-based content management system by a [] content provider . . . along with . . . metadata.” *See, e.g.*, Ex. E, ’388 patent, claim 1.<sup>2</sup> Plaintiff’s expert, Dr. Shamos, opined unequivocally in his report that the Navic system does *not* have a “Web-based content management system

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<sup>2</sup> The ’388 patent states “video content was uploaded to a Web-based content management system by a respective content provider device . . . along with respective specified metadata.” Ex. E, ’388 patent, claim 1. The ’750 patent states “video content was uploaded to the Web-based content management system by a content provider device . . . along with the associated first video-on-demand application-readable metadata.” Ex. F, ’750 patent, claim 1. The ’751 patent states “video content was uploaded to the Web-based content management system by a content provider device . . . along with the associated first video-on-demand application-readable metadata.” Ex. G, ’751 patent, claim 1. The ’026 patent states “video content was uploaded to a Web-based content management system by a content provider device . . . along with associated metadata.” Ex. H, ’026 patent, claim 1.

(“WBCMS”)” allowing for the uploading of video content and metadata and explain in detail why. Ex. B, Shamos Report ¶¶ 1110, 1116-18.

With regard to Defendants’ expert, Mr. Williams, to support his derivation opinion he relies primarily on two figures that depict a diagram of the Navic application platform. Ex. I, Williams Report Ex. 1 at 32-34. The first figure, Figure 1 of the “Navic II” document, is a layout of the components [REDACTED]

[REDACTED]

[REDACTED]

Ex. J at WALL-BBITV-AMZN\_0000731. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

There is no dispute between the parties' experts that the Navic system that Defendants rely on for their derivation claim lacks a "video content was uploaded to a Web-based content management system by a [] content provider . . . along with . . . metadata" as required by every asserted claim.<sup>3</sup> Plaintiff's expert, Dr. Shamos, opined unequivocally in his report that the Navic system does **not** have a Web-based content management system that allows for the uploading of video content and associated metadata as required by the claims. Ex. B, Shamos Report ¶ 1110.

Defendants' expert, Mr. Williams, did **not** dispute the fact that the Navic system fails to disclose this "Web-based content management system" limitation when asked in his deposition. Mr. Williams testified, [REDACTED]

[REDACTED]

[REDACTED] Ex. K, Williams Tr. 150:10-18. Mr. Williams further [REDACTED]

[REDACTED]

[REDACTED]

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<sup>3</sup> The '388 patent states "video content was uploaded to a Web-based content management system by a respective content provider device . . . along with respective specified metadata." (Ex. E). The '750 patent states "video content was uploaded to the Web-based content management system by a content provider device . . . along with the associated first video-on-demand application-readable metadata." (Ex. F). The '751 patent states "video content was uploaded to the Web-based content management system by a content provider device . . . along with the associated first video-on-demand application-readable metadata." (Ex. G). The '026 patent states "video content was uploaded to a Web-based content management system by a content provider device . . . along with associated metadata." (Ex. H).

[REDACTED]

*Id.* at 151:11-17 (emphasis added).

Therefore, there is *uncontested expert testimony* that the Navic documents on which Defendants rely do not disclose a “Web-based content management system” for receiving uploaded VOD content and associated metadata (much less have an enabling disclosure). Because Defendants have no expert testimony that the “Web-based content management system” limitation is disclosed in the Navic documents or otherwise in the possession of someone at Navic, Defendants cannot meet their burden of proving by clear and convincing evidence that someone at Navic had conceived of “all limitations of the claimed invention.” *Cumberland Pharmaceuticals*, 846 F.3d at 1218. Summary judgment should thus be granted on this basis alone.

Here, there is undisputed expert testimony on a central, technical issue, Mr. Williams does

[REDACTED]

[REDACTED] limitation common in each of the asserted claims of the ’388, ’750, ’751 and ’026 patents. The Federal Circuit has held that “‘typically’ expert testimony will be necessary in cases involving complex technology.” *Centricut, LLC v. Esab Group, Inc.*, 390 F.3d 1361, 1370 (Fed. Cir. 2004) (quoting *Schumer v. Lab. Computer Sys. Inc.*, 308 F.3d 1304, 1315 (Fed. Cir. 2002)). Thus, because there is undisputed testimony from Plaintiff’s expert (Dr. Shamos) and a lack of testimony from Defendants’ expert (Mr. Williams) on the sole issue in this motion, the issue must be resolved in Plaintiff’s favor as a matter of law because Defendants’ bear the burden of proof on the defense of derivation. *Id.* (holding that a lack of expert testimony on a complex technical issue means the party bearing the burden of proof on that issue fails as a matter of law

to meet their burden: “Suffice it to say that in a case involving complex technology, where the accused infringer offers expert testimony negating infringement, the patentee cannot satisfy its burden of proof by relying only on testimony from those who are admittedly not expert in the field.”).

**C. Defendants Cannot Show Prior Conception by Another**

Defendants’ derivation defense fails because they have failed to identify “another” who conceived of the patented inventions. *Eaton*, 323 F.3d at 1344. To prove derivation under § 102(f), “the party asserting invalidity must prove both **prior conception** of the invention by another and communication of that conception to the patentee” by clear and convincing evidence. *Id.* “**Conception** is the formation in the ***mind of the inventor*** of a definite and permanent idea of the complete and operative invention, as it is therefore to be applied in practice.” *Id.*

Because conception happens in the mind of a person, an inventor, proving “prior conception” requires the Defendants to identify the inventor who conceived of the invention containing “all limitations of the claimed invention.” *Cumberland Pharmaceuticals*, 846 F.3d at 1218. It is undisputed that the Defendants have not identified any person who actually conceived of the patented inventions prior to Mr. Diaz Perez as part of their derivation defense. Because Defendants have not identified “another” inventor, it is impossible for them to prove “prior conception of the invention by another.” *Eaton*, 323 F.3d at 1344; *Cumberland Pharm.*, 846 F.3d at 1219-21 (“The court thus found that Mylan did not prove that an FDA **person** conceived of that formulation, or communicated it to Cumberland, before Mr. Pavliv thought of it.”) (emphasis added).

Defendants also do not offer any dates associated with the alleged prior conception. When asked about any specific dates for the alleged prior conception, [REDACTED]

[REDACTED] Ex. K, Williams Tr. 124:12-25, 125:1-23, 126:5-24, 127:5-

16. Because Defendants cannot name a prior inventor who conceived of the entire invention and cannot identify the alleged date for conception by another, it is not possible for Defendants to prove “prior conception” as required for a derivation defense.

As a result, summary judgement of no derivation should be granted on this basis as well.

**D. Defendants Cannot Show Communication of a Complete Conception to Mr. Diaz Perez**

Defendants’ derivation defense also fails as they have no evidence of any specific communication from Navic to Mr. Diaz Perez disclosing the conception of all limitations of the patented inventions. *Eaton*, 323 F.3d at 1344. As noted above, Defendants have not identified the alleged prior inventor so they cannot possibly identify any communication between the alleged mystery inventor at Navic and Mr. Diaz Perez. Further, as discussed above, there is uncontested expert testimony that the evidence that Defendants rely on fail to disclose the “Web-based content management system” limitation. Ex. B, Shamos Report ¶ 1114-1118; Ex. K, Williams Tr. at 150:10-18, 151:11-17. Further, there is no testimony of any person from Navic stating that they disclosed the patented inventions to Mr. Diaz.

To the contrary, all of the testimony in the record shows that Mr. Diaz Perez was the first and only inventor of the patented inventions in this case. Mr. Diaz Perez’s testimony confirms that Navic *never* communicated or disclosed to him a Web-based content management system capable of receiving VOD content and related metadata uploaded by content provider. Diaz Perez Decl. ¶ 3. Mr. Diaz Perez’s deposition testimony, likewise, is ripe with examples that show that not only did Navic fail to communicate a prior conception to him, Navic’s work was primitive and could not perform the functions of Mr. Diaz Perez’s claimed inventions. Ex. D, Diaz Tr. (3-24-2022) at 71:4-16 [REDACTED]

[REDACTED]

[REDACTED]”);  
Ex. L, Diaz Tr. (3-25-2022) at 179:21-22 [REDACTED] );  
Ex. M, Diaz Tr. (6-3-2021) at 230:12-21 [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] ); Ex. D, Diaz Tr.  
(3-24-2022) at 67:14-69:10; 71:4-16; Ex. L, Diaz Tr. (3-25-2022) at 161:5-10 [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Moreover, third party testimony from Ms. Wall, who interfaced with Navic as part of his work at BBiTV, confirmed that Mr. Diaz-Perez and not Navic is the inventor. Ex. N, Wall Tr. at 38:11-14 (“Q [REDACTED]  
[REDACTED] ); *see also* Ex. O, Declaration of Milton Diaz Perez in IPR2020-01267 (BBiTV-AMZN\_0193188). Ex. B, Shamos Report ¶¶ 1121-1124.

#### IV. CONCLUSION

Defendants’ derivation defense fails as a matter of law because there was not a complete prior conception of the entire invention claimed in the ’388 patent, ’750 patent, ’751 patent, and ’026 patent in the Navic system. It is undisputed that the Navic system did not have a WBCMS to which content providers could upload videos and associated metadata. Defendants fail to identify any inventor or group of inventors who allegedly conceived of the invention. There is

also no evidence of any communication of complete conception of the entire invention to the inventor. There are no genuine disputes of fact on these issues. As such, Defendants' derivation defense should be adjudicated on summary judgment.



**IN THE UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

BROADBAND iTV, INC.,

Plaintiff,

v.

AMAZON.COM, INC., AMAZON.COM SER-  
VICES LLC and AMAZON WEB SERVICES,  
INC.,

Defendants.

Civil Action No. 6:20-cv-00921-ADA

**PUBLIC VERSION**

**DEFENDANTS' OPPOSITION TO PLAINTIFF'S MOTION FOR  
SUMMARY JUDGMENT REGARDING DERIVATION**

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35 U.S.C. § 112-----	8

**TABLE OF EXHIBITS TO THE DECLARATION OF MIN WU**

<b>Exhibit</b>	<b>Description</b>	<b>Short Cite</b>
1	Expert Report of Jim Williams (excerpt)	Williams Rep.
2	Expert Report of Michael Shamos (excerpt)	Shamos Rep.
3	Printed emails, notes, and other documents (produced with Bates Nos. BBiTV-AMZN_0189262-83)	
4	[REDACTED] (produced with Bates Nos. WALL-BBITV-AMZN_0000726-42)	
5	[REDACTED] (produced with Bates Nos. WALL-BBITV-AMZN_0000458-607)	
6	[REDACTED] (produced with Bates Nos. BBITV-AMZN_0187286-309)	
7	Declaration of Milton Diaz Perez, IPR2020-01267, Ex. 2036 (produced with Bates Nos. BBITV-AMZN_0193188-270)	
8	January 21, 2004 to January 27, 2004 email thread between [REDACTED] (produced with Bates Nos. BBiTV-AMZN_0193320)	
9	June 3, 2022 Deposition Transcript of Jim Williams (excerpts)	Williams Tr.
10	[REDACTED] (produced with Bates Nos. BBiTV-AMZN_0034158-69)	
11	June 30, 2004 email between [REDACTED] (produced with Bates Nos. BBITV-	

	AMZN_0187842-43)	
12	June 3, 2022 Deposition Transcript of Michael Shamos (excerpts)	Shamos Tr.
13	March 18, 2004 to March 23, 2004 email thread between [REDACTED] [REDACTED] produced with Bates Nos. BBiTV-AMZN_0051375-77)	
14	May 24, 2004 email thread between [REDACTED] [REDACTED] (produced with Bates Nos. BBiTV-AMZN_0051971)	
15	January 26, 2004 email thread between [REDACTED] [REDACTED] produced with Bates Nos. BBiTV-AMZN_0051640)	

## I. INTRODUCTION

Derivation is a question of fact, and BBiTV is not entitled to summary judgment of no derivation. Specifically, four of the asserted patents in this case are invalid because the named inventor Mr. Diaz derived the entirety of the invention from Navic, a company that helped him develop a video-on-demand platform in 2003-2004. The only claimed feature that BBiTV contends is not derived from the Navic system is a Web-based content management system for receiving uploaded video content and metadata. But Navic's system includes a web-server (*i.e.*, Web-based content management system) allowing a client console to upload and manage video assets (*i.e.*, video content) and related data (*i.e.*, metadata). In fact, BBiTV's expert Dr. Shamos also agrees that Navic provided a web-based authoring tool that allowed advertisers to create and manage content, *i.e.*, a Web-based content management system. BBiTV also argues that Amazon does not identify individual Navic inventors or the specific date of the invention, but these are not requirements of derivation. In any event, the documents cited by Amazon's expert Mr. Williams

[REDACTED]. Finally, BBiTV's argument that Navic did not sufficiently communicate the invention to Mr. Diaz ignores the hundreds of pages of technical specifications delivered to BBiTV and other forms of communications such as emails and in-person training.

## II. FACTUAL BACKGROUND

Amazon asserts a derivation defense against four of the asserted patents.<sup>1</sup> (Dkt. 85; Dkt 95; Ex., 1, Williams Rep. at ¶¶ 2475-512.) This defense is established by the extensive communications between the named inventor of the asserted patents, Milton Diaz Perez ("Mr. Diaz"), and Navic Systems Inc., also known as Navic Networks (collectively "Navic"), as well as hundreds of

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<sup>1</sup> U.S. Patent Nos. 9,648,388 (the "'388 patent"), 10,536,750 (the "'750 patent"), and 10,536,751 (the "'751 patent"), and 10,028,026 (the "'026 patent"). BBiTV asserts a March 31, 2004 priority date for all four of these patents. (Ex. 2, Shamos Rep. at ¶ 64.)

**CONFIDENTIAL MATERIAL REDACTED**

pages of technical documents Navic provided to BBiTV regarding [REDACTED]

[REDACTED] (See, e.g., Ex. 3, BBiTV-AMZN\_0189262-83; Ex. 4, WALL-BBITV-AMZN\_0000726; Ex. 5, WALL-BBITV-AMZN\_0000458; Ex. 6, BBITV-AMZN\_0187286.)

Mr. Diaz contacted Navic [REDACTED]

[REDACTED] (See Ex. 3, BBiTV-AMZN\_0189262 at 282 [REDACTED]

[REDACTED] This was followed by a [REDACTED]. (Ex. 7, BBiTV-AMZN\_0193188 at 3200 (Declaration of Mr. Diaz in IPR2020-01267).) During this process, [REDACTED]

[REDACTED] (Ex. 3, BBiTV-AMZN\_0189262 at 269.) [REDACTED]

[REDACTED] (Ex. 7, BBITV-AMZN\_0193188 at 203.) [REDACTED]

[REDACTED]. (Ex. 3, BBiTV-AMZN\_0189262 at 263; Ex. 8, BBiTV-AMZN\_0193320 at 322.) [REDACTED]

[REDACTED]. (Ex. 4, WALL-BBITV-AMZN\_0000726 [REDACTED] Ex. 5, WALL-BBITV-AMZN\_0000458 [REDACTED] Ex. 6, BBITV-AMZN\_0187286 [REDACTED]

[REDACTED] in March 2004, Mr. Diaz allegedly conceived the subject matter in the asserted patents. In July 2004, Mr. Diaz filed his patent application leading to the asserted patents here.

CONFIDENTIAL MATERIAL REDACTED

The Navic system disclosed to Mr. Diaz includes [REDACTED]. (Ex. 4, WALL-BBITV-AMZN\_0000726 at 730). [REDACTED]

[REDACTED] (Id. at 731; Ex. 9, Williams Tr. at 141:24-142:14, 144:5-10, 145:1-2.) [REDACTED]

[REDACTED] (Ex. 5, WALL-BBITV-AMZN\_0000458 at 489; Ex. 6, BBITV-AMZN\_0187286 at 290). [REDACTED]

[REDACTED] (Ex. 5, WALL-BBITV-AMZN\_0000458 at 482-86, 511; Ex. 4, WALL-BBITV-AMZN\_0000726 at 733.)

### III. ARGUMENT

A patent is invalid if the named inventor “did not himself invent the subject matter sought to be patented,” *i.e.*, derived the subject matter from another. 35 U.S.C. § 102(f). Derivation is a question of fact. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1576 (Fed. Cir. 1997). “To show derivation, the party asserting invalidity must prove both prior conception of the invention by another and communication of that conception to the patentee.” *Id.* As discussed below, Navic and its employees conceived the entire solution claimed in the ’388 , ’750, ’751 and ’026 patents, and communicated that conception to Mr. Diaz.

#### A. The Navic System Includes a Web-based Content Management System.

Contrary to BBiTV’s assertion (Mot. at 5-9), the Navic system includes a Web-based content management system (“WBCMS”) for receiving uploaded video content and metadata. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



(Ex. 6, BBITV-AMZN\_0187286 at 291 (annotation in original).)<sup>2</sup>

For example, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(Ex. 4, WALL-BBITV-AMZN\_0000726 at 731 (annotation added).) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (*Id.*) Therefore, the “web server” manages content (*i.e.*, “asset”) and is a Web-based content management system. As Mr. Willaims explains, [REDACTED]

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<sup>2</sup> Mr. Diaz had this Navic Content Development Guide document at least by January 2004, well before his alleged March 2004 conception of the asserted patents, because a January 2004 BBiTV document coauthored by Mr. Diaz cited the Navic Content Development Guide in the “Related Materials” section. (Ex. 10, BBiTV-AMZN\_0034158 at 168-169.)

[REDACTED]

[REDACTED]. (Ex. 9, Williams Tr. at 141:24-142:14, 144:5-10, 145:1-2.)

[REDACTED]

[REDACTED]

[REDACTED]:

[REDACTED]

(Ex. 6, BBITV-AMZN\_0187286 at 289 (annotation in original).)

BBiTV's own documentation further shows that Mr. Diaz relied on Navic's Web-based video uploading capabilities. [REDACTED]

[REDACTED]

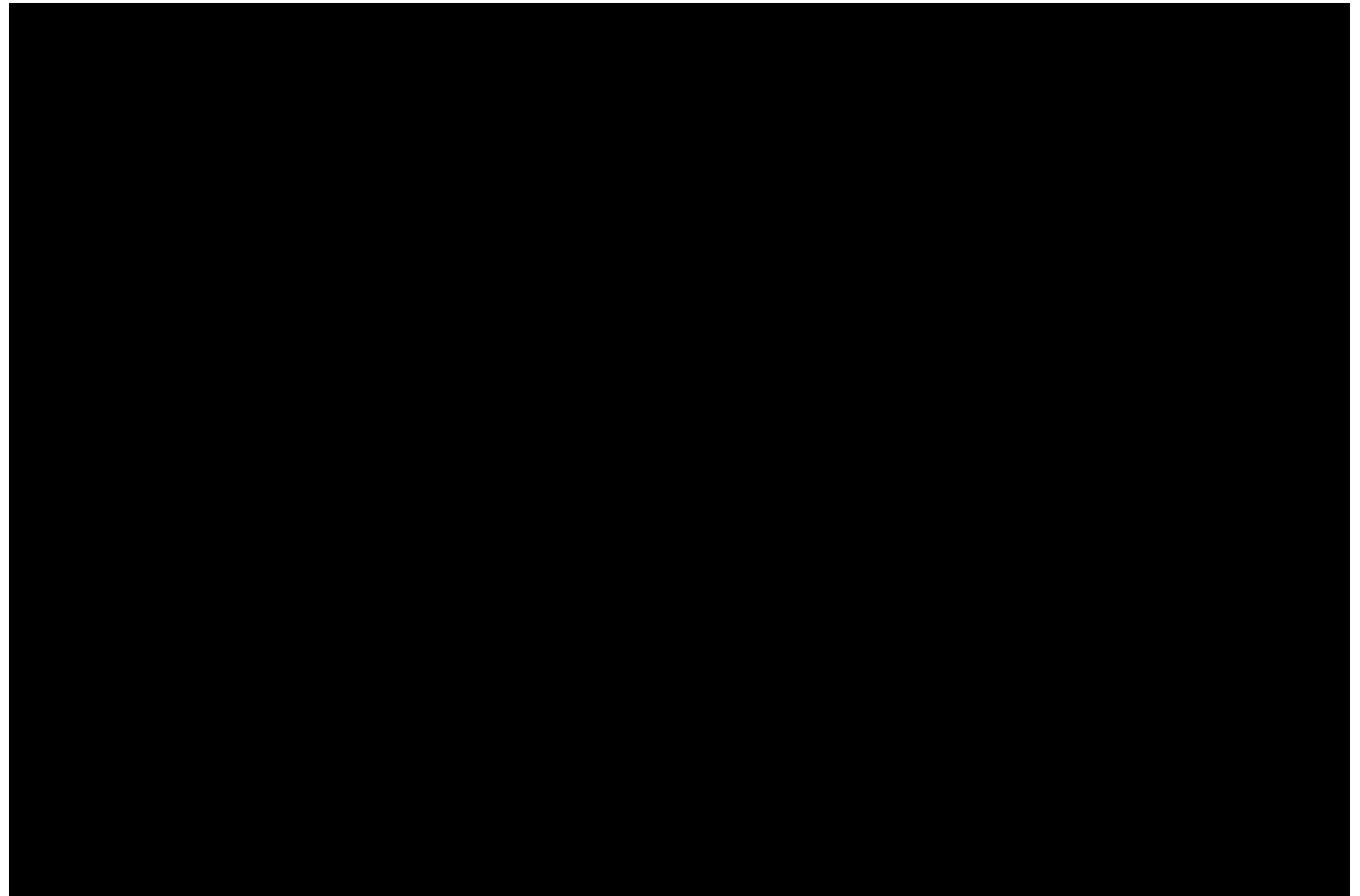
[REDACTED]

[REDACTED] (Ex. 10, BBITV -AMZN\_0034158 at 161.) [REDACTED]

[REDACTED]

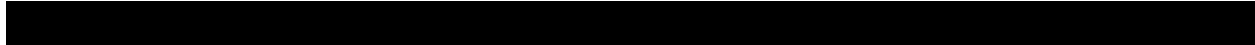
[REDACTED]

[REDACTED]



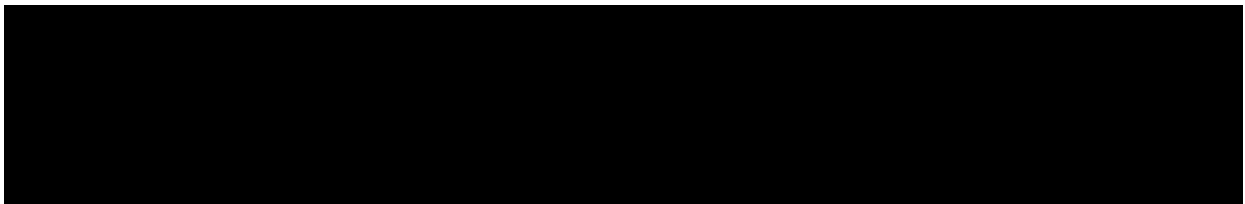
(*Id.* at 163 (annotation added).)

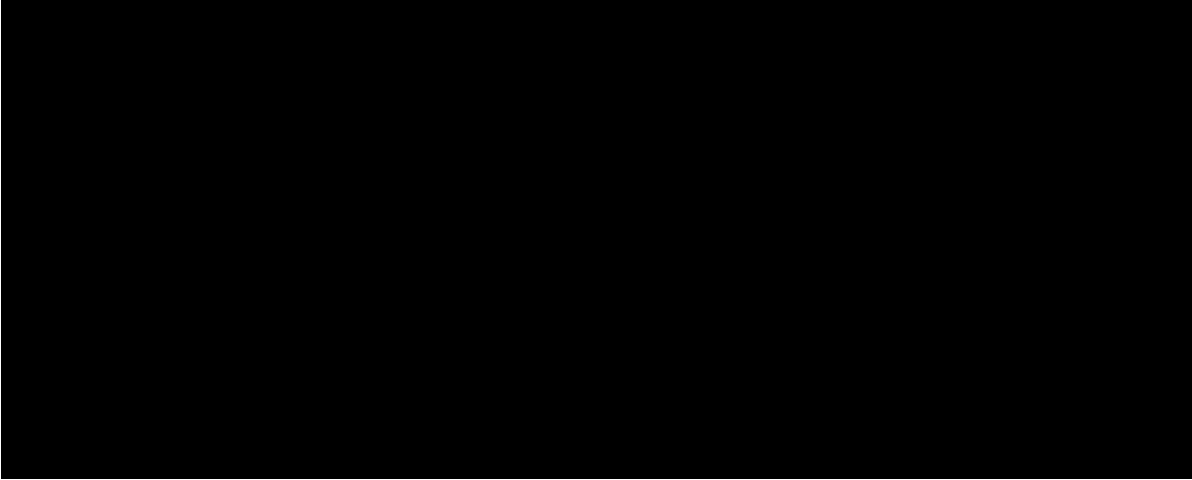
Mr. Diaz's patent prosecution attorney also confirmed



 (Ex. 11, BBITV-AMZN\_0187842.)

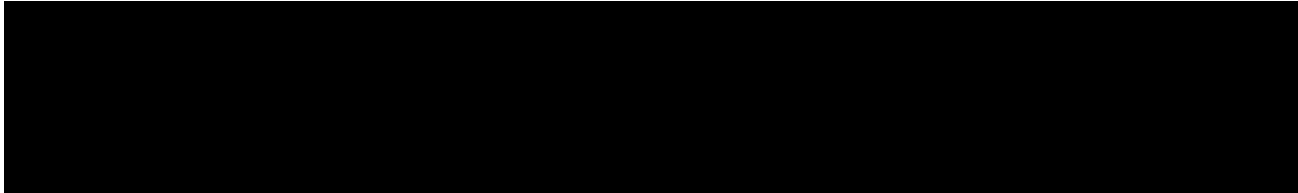
Importantly, BBiTV's own expert Dr. Shamos *agrees* that Navic had "a web-based authoring tool for creation and management of advertising content," *i.e.*, a WBCMS that allows authors to upload and manage advertising content.





(Ex. 12, Shamos Tr. at 158:3-6, 159:25-160:3, 174:9-14.) To the extent Dr. Shamos disagrees with Mr. Williams that the WBCMS supports video uploading, the issue comes down to a “battle of the experts.” *See XY, LLC v. Trans Ova Genetics, L.C.*, 890 F.3d 1282, 1289 (Fed. Cir. 2018). Therefore, summary judgment is inappropriate.

BBiTV selectively quotes portions of Mr. Williams’ testimony to argue that there is no enabling disclosure of WBCMS. (Mot. at 7-8.) But BBiTV omits Mr. Williams’ testimony that Navic’s description is at least as good as Mr. Diaz’s cited support for conception—a point BBiTV never disputes.



(Ex. 9, Williams Tr. at 148:12-17.) Mr. Williams’ analysis follows the law of derivation, which subjects “prior conception” by the original inventor to the same standard of conception by any inventor. *See Cumberland Pharms. Inc. v. Mylan Institutional LLC*, 846 F.3d 1213, 1218 (Fed. Cir. 2017) (“The conception requirement of derivation borrows from the conception standard for prior invention.”). Therefore, the description in the Navic documents is sufficient if it is at the same level as Mr. Diaz’s cited support for conception, submitted under oath to the Patent Trial and

Appeal Board. (*See* Mot. Ex. O.) In any event, evidence of derivation is not subject to the enablement requirement under 35 U.S.C. § 112. As Mr. Williams explained, [REDACTED] (Ex. 9, Williams Tr. at 129:16-18.) Therefore, there is no basis for him to opine on whether the Navic documents have enabling disclosures under Section 112. *See Fiers v. Revel*, 984 F.2d 1164, 1169 (Fed. Cir. 1993) (“The issue [of] conception [is] not enablement.”).

Contrary to BBiTV’s argument that Amazon provided “no expert testimony” regarding WBCMS, Mr. Williams provided extensive testimony with respect to Navic’s description of WBCMS, as discussed above. (*See, e.g.*, Ex. 9, Williams Tr. at 141:24-142:14, 144:5-10, 145:1-2; Mot. Ex. I.) For the same reason, BBiTV’s citation to *Centricut, LLC v. Esab Group, Inc.*, 390 F.3d 1361 (Fed. Cir. 2004) is irrelevant. There, the plaintiff could not show infringement because it relied solely on testimony of non-expert witnesses. *Id.* at 1370. Here, however, Mr. William is indisputedly an expert in the field, and he concluded in his expert opinion that Navic describes a WBCMS receiving video content and metadata.

**B. Navic Employees Conceived the Invention at Least by March 2004.**

BBiTV argues that Amazon cannot show prior conception of the invention “by another” because Amazon has not identified a specific individual “person” at Navic who invented the Navic system. (Mot. at 9.) But a derivation defense just requires the defendant to show that someone other than the named inventor conceived the invention. According to the Federal Circuit itself, proof that the idea “was conceived by someone” at an organization is sufficient. *Cumberland*, 846 F.3d 1213, 1218 (Fed. Cir. 2017); *see also Endo Pharms. Inc. v. Actavis LLC*, 922 F.3d 1365, 1374 n.9 (Fed. Cir. 2019) (finding communications from the Federal Drug Administration qualify as prior art under 35 U.S.C. § 102(f)). District courts have held similarly. *E.g., In re Bendamustine Consol. Cases*, No. CV 13-2046-GMS, 2016 WL 3381219, at \*14 (D. Del. June 10, 2016) (finding

patent claims were “derived from Fujisawa [Deutschland GmbH]” because of samples and technical specifications provided to plaintiff by Fujisawa). By contrast, BBiTV has failed to point to a single case that holds that the defendant must identify a specific person in order to show conception “by another.” Here, Navic’s technical specifications are sufficient to show that Navic employees, not Mr. Diaz, conceived the alleged invention. (*See, e.g.*, Ex. 4, WALL-BBITV-AMZN\_0000726; Ex. 5, WALL-BBITV-AMZN\_0000458; Ex. 6, BBITV-AMZN\_0187286.)

Moreover, Amazon has in fact identified an individual who authored the Navic technical specification: [REDACTED]. (Ex. 4, WALL-BBITV-AMZN\_0000726 at 726.) [REDACTED]  
[REDACTED] (*E.g.*, Ex. 3, BBiTV-AMZN\_0189262 at 263; Ex. 8, BBiTV-AMZN\_0193320 at 322.) Therefore, even if the Court applied BBiTV’s incorrect standard, it should deny summary judgment.

BBiTV also argues that the derivation defense fails because Amazon does not “offer any dates associated with the alleged prior conception.” (Mot. at 9-10.) But yet again, BBiTV fails to identify a single case requiring the identification of a “specific date” of the prior conception. *Id.* The technical specifications cited by Mr. Williams predate Mr. Diaz’s alleged conception date of March 31, 2004. (Ex. 4, WALL-BBITV-AMZN\_0000726 (dated August 25, 2003); Ex. 5, WALL-BBITV-AMZN\_0000458 (copyrighted 2003); Ex. 6, BBITV-AMZN\_0187286 (possessed by Mr. Diaz at least by January 2004).) [REDACTED]

[REDACTED] (Ex. 9, Williams Tr. at 130:3-13.) Therefore, BBiTV’s argument regarding the identification of dates also fails.

### **C. Navic Repeatedly Communicated Its Invention to Mr. Diaz.**

BBiTV argues that Amazon has “no evidence of any specific communication from Navic

to Mr. Diaz disclosing the conception of all limitations of the patented inventions.” (Mot. at 10-11.) Derivation requires “communication of the entire conception” from the original inventor, *Gambro*, 110 F.3d at 1577, and [REDACTED]. (See, e.g., Ex. 4, WALL-BBITV-AMZN\_0000726; Ex. 5, WALL-BBITV-AMZN\_0000458; Ex. 6, BBITV-AMZN\_0187286.) BBitV only contends that the Navic documents fail to disclose a WBCMS (Mot. at 10), but this argument fails as explained above in Section III.A. Further, [REDACTED]. (See e.g., Ex. 13, BBitV-AMZN\_0051375 [REDACTED]; Ex. 14, BBitV-AMZN\_0051971 [REDACTED] Ex. 15, BBitV-AMZN\_0051640 [REDACTED] [REDACTED] (Ex. 3, BBitV-AMZN\_0189262 at 263; Ex. 8, BBitV-AMZN\_0193320 at 322.)

BBitV fails to address the extensive communications listed above and instead relies exclusively on deposition testimony of Mr. Diaz and Ms. Wall, his coworker at the time. (Mot. at 10-11.) First, their self-serving testimony regarding who made or developed the invention at best creates a disputed fact, which is contradicted by document evidence and Mr. Williams’ testimony. Second, whether Navic’s system was “delivered” or “turn[ed] on” is irrelevant. A derivation defense only requires conception, not that the idea be reduced to practice. See *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1228 (Fed. Cir. 1994) (“[A]n inventor need not know that his invention will work for conception to be complete. He need only show that he had the idea . . . .”) (internal citation omitted). A working VOD system is unnecessary for Mr. Diaz to derive the invention from Navic.

**D. The Rest of BBiTV's Arguments Do Not Justify Summary Judgment.**

BBiTV raises two additional arguments in the Background section of its motion but does not seriously contend that they form the basis for summary judgment. First, it argues that Mr. Diaz submitted a Navic patent application to the Patent Office. (Mot. at 2.) While submission to the Patent Office might satisfy Mr. Diaz's duty of disclosure, it does not defeat a finding of derivation. Further, all Mr. Diaz disclosed was a Navic patent publication. He did not disclose the hundreds of pages of Navic documents that he had in possession describing technical details of the Navic system including the WBCMS and the use of templates. Therefore, the examiner did not have an opportunity to properly evaluate the derivation issue. Second, BBiTV argues that the Navic N-Band system forms the claimed VOD application server, but not the separate WBCMS. (Mot. at 2-3.) Again, as discussed above, [REDACTED]

[REDACTED] (Ex. 4, WALL-BBITV-AMZN\_0000726 at 731.) Therefore, both arguments fail.

**IV. CONCLUSION**

For the foregoing reasons, the Court should deny BBiTV's motion for summary judgment of no derivation.



Dated: July 6, 2022

Respectfully submitted,

*Of Counsel:*

J. Mark Mann (TX Bar #12926150)  
Mark@TheMannFirm.com  
G. Blake Thompson (TX Bar #24042033)  
Blake@TheMannFirm.com  
MANN | TINDEL | THOMPSON  
201 E. Howard St.  
Henderson, Texas 75654  
(903) 657-8540  
(903) 657-6003

/s/ J. David Hadden

J. David Hadden  
CSB #176148 (admitted W.D. TX)  
Saina S. Shamilov  
CSB #215636 (admitted W.D. TX)  
Ravi R. Ranganath  
CSB #272981 (admitted W.D. TX)  
Allen Wang  
CSB #278953 (admitted W.D. TX)  
FENWICK & WEST LLP  
801 California Street  
Mountain View, CA 94041  
Email: dhadden@fenwick.com  
sshamilov@fenwick.com  
rranganath@fenwick.com  
allen.wang@fenwick.com  
Tel.: 650.988.8500

Todd R. Gregorian (*pro hac vice*)  
Min Wu (*pro hac vice*)  
Gregory Sefian (*pro hac vice*)  
Eric B. Young  
CSB #318754 (admitted W.D. TX)  
FENWICK & WEST LLP  
555 California Street, 12th Floor  
San Francisco, CA 94104  
Email: tgregorian@fenwick.com  
minwu@fenwick.com  
gsefian@fenwick.com  
eyoung@fenwick.com  
Tel.: 415.875.2300

Howard L. Lim (*pro hac vice*)  
FENWICK & WEST LLP  
1191 Second Avenue, 19th Floor  
Seattle, WA 98101  
Email: hlim@fenwick.com  
Tel.: 206.389.4510

Geoffrey R. Miller (*pro hac vice*)  
Daniel S. Rabinowitz (*pro hac vice*)  
FENWICK & WEST LLP  
902 Broadway, Suite 14  
New York, NY 10010  
Email: gmiller@fenwick.com  
drabinowitz@fenwick.com  
Tel.: 212.430.2600

*Attorneys for Defendants Amazon.com, Inc.,  
Amazon.com Services LLC, and Amazon Web  
Services, Inc.*

**CERTIFICATE OF SERVICE**

I hereby certify that on July 6, 2022, I electronically filed the foregoing with the Clerk of the Court using the Court's CM/ECF system, which will automatically send a notification effecting service on counsel of record for all other parties who have appeared in this action and that a true and correct copy of the foregoing document and accompanying exhibits were served via electronic mail to counsel of record for all parties.

/s/ J. David Hadden